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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup>:</b> <b>C07C 251/00</b>	<b>A2</b>	<b>(11) International Publication Number:</b> <b>WO 98/17631</b> <b>(43) International Publication Date:</b> 30 April 1998 (30.04.98)
<b>(21) International Application Number:</b> PCT/EP97/05857 <b>(22) International Filing Date:</b> 23 October 1997 (23.10.97) <b>(30) Priority Data:</b> 2599/96 23 October 1996 (23.10.96) CH <b>(71) Applicant (for all designated States except US):</b> NOVARTIS AG [CH/CH]; Schwarzwaldallee 215, CH-4058 Basel (CH). <b>(72) Inventor; and</b> <b>(75) Inventor/Applicant (for US only):</b> MÜLLER, Urs [CH/CH]; Drosselstrasse 6, CH-4142 Münchenstein (CH). <b>(74) Agent:</b> ROTH, Bernhard, M.; Novartis AG, Patent- und Markenabteilung, Lichtstrasse 35, CH-4002 Basel (CH).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>Without international search report and to be republished upon receipt of that report.</i>
<b>(54) Title:</b> PESTICIDES  <b>(57) Abstract</b>  <p>The invention relates to novel pesticidally active compounds of formula (1) and to their possible isomers and mixtures of isomers, wherein: R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>5</sub>haloalkoxy or by cyano; R<sub>2</sub> is C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl or by cyano; R<sub>3</sub>/R<sub>4</sub> are each independently hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl or C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl; A is a ketimino or aldimino group; and X is oxygen, NH or NR<sub>9</sub> wherein R<sub>9</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl. The novel active ingredients have plant-protecting properties and are suitable for the protection of plants against infestation by phytopathogenic microorganisms.</p> <div style="text-align: center;"> <p>(1)</p> </div>		

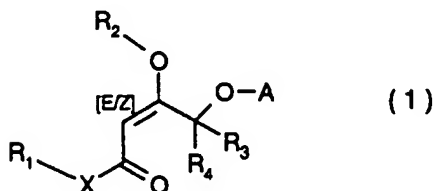
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Pesticides

The invention relates to novel pesticidally active compounds of formula 1



and to their possible isomers and mixtures of isomers,

wherein:

R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>5</sub>haloalkoxy or by cyano;

R<sub>2</sub> is C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl or by cyano;

R<sub>3</sub>/R<sub>4</sub> are each independently hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl or C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl;

A is a ketimino or aldimino group; and

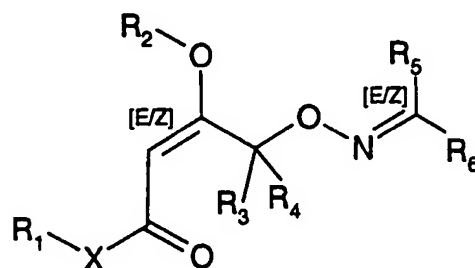
X is oxygen, NH or NR<sub>9</sub> wherein R<sub>9</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl.

The invention relates also to the preparation of those compounds, to agrochemical compositions that comprise as active ingredient at least one of those compounds, and to the use of the compounds or the compositions in pest control, especially as fungicides in agriculture and horticulture.

The compounds of formula 1 are oils or solids at room temperature and are distinguished by valuable microbicidal properties. They may be used preventatively and curatively in the agricultural sector or related fields in the control of plant-destructive microorganisms. They enable plant crops to be protected throughout a growing season. At low rates of concentration the compounds of formula 1 according to the invention are not only distinguished by excellent microbicidal activity, especially fungicidal activity, but also are especially well tolerated by plants.

If asymmetric carbon atoms are present in the compounds of formula 1, the compounds occur in optically active form. Owing to the presence of double bonds, the compounds may exist in [E] and/or [Z] forms. The invention relates both to the pure isomers, for example enantiomers, diastereoisomers, and to all possible mixtures of isomers, for example mixtures of diastereoisomers, racemates or mixtures of racemates.

As an example, attention is drawn especially to compounds of formula 2



(2)

wherein

R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>5</sub>haloalkoxy or by cyano;

R<sub>2</sub> is C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl or by cyano;

R<sub>3</sub>/R<sub>4</sub> are each independently hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl or C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl;

R<sub>5</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, cyano, or aryl unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio and/or C<sub>1</sub>-C<sub>5</sub>haloalkylthio;

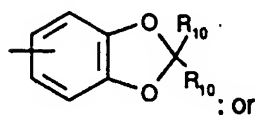
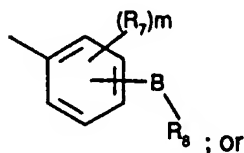
R<sub>6</sub> is C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; aryloxy, unsubstituted or mono- or poly-substituted by

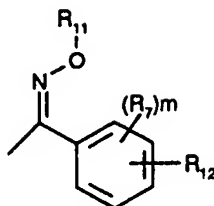
halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or by a 5- or 6-membered saturated or unsaturated heterocycle that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or

C<sub>3</sub>-C<sub>6</sub>alkenyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or by a 5- or 6-membered saturated or unsaturated heterocycle that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or

C<sub>3</sub>-C<sub>6</sub>alkynyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or by a 5- or 6-membered saturated or unsaturated heterocycle that

contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or  
 aryl unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, aryloxyalkyl, aralkyloxyalkyl, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or  
 C<sub>3</sub>-C<sub>6</sub>cycloalkyl unsubstituted or substituted by C<sub>1</sub>-C<sub>5</sub>alkyl, alkoxy or by halogen; or  
 a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio; and/or aryl unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>-alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si- and/or cyano; and/or by a 5- or 6-membered heterocycle that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio and/or C<sub>1</sub>-C<sub>5</sub>haloalkylthio; or  
 a benzo-5- or -6-membered heteroaromatic ring unsubstituted or substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, cyano, nitro, unsubstituted or substituted aryl, unsubstituted or substituted aryloxy or by an unsubstituted or substituted 5- or 6-membered heterocycle;  
 or a radical:





wherein

$R_7$  is hydrogen, halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-O-, haloalkoxy, haloalkylthio, cyano or nitro, and

$R_8$  is hydrogen;

$C_1$ - $C_{12}$ alkyl unsubstituted or substituted by halogen;  $C_1$ - $C_{12}$ alkoxy;  $C_1$ - $C_5$ haloalkoxy;  $N(R_2)_m$ ; oxo or a derivative thereof, such as a ketal; aryl, unsubstituted or mono- or poly-substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_3$ alkoxy,  $C_1$ - $C_3$ haloalkoxy,  $C_1$ - $C_3$ haloalkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ alkylthio,  $C_1$ - $C_5$ haloalkylthio,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; aryloxy, unsubstituted or mono- or poly-substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_3$ alkoxy,  $C_1$ - $C_3$ haloalkoxy,  $C_1$ - $C_3$ haloalkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ alkylthio,  $C_1$ - $C_5$ haloalkylthio,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or by a 5- or 6-membered saturated or unsaturated heterocycle that may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or

$C_3$ - $C_6$ alkenyl unsubstituted or substituted by halogen;  $C_1$ - $C_{12}$ alkoxy;  $C_1$ - $C_5$ haloalkoxy;  $N(R_2)_m$ ; aryl, unsubstituted or mono- or poly-substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_3$ alkoxy,  $C_1$ - $C_3$ haloalkoxy,  $C_1$ - $C_3$ haloalkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ alkylthio,  $C_1$ - $C_5$ haloalkylthio,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; aryloxy, unsubstituted or mono- or poly-substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_3$ alkoxy,  $C_1$ - $C_3$ haloalkoxy,  $C_1$ - $C_3$ haloalkoxy- $C_1$ - $C_5$ alkyl,



$C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3Si-$ ,  $(C_1-C_5alkyl)_3Si-O-$ , cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; or by a 5- or 6-membered saturated or unsaturated heterocycle that may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or  $C_3-C_6$ alkynyl unsubstituted or substituted by halogen;  $C_1-C_{12}$ alkoxy;  $C_1-C_5$ haloalkoxy;  $N(R_2)_m$ ; aryl, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,  $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_3$ haloalkoxy- $C_1-C_5$ alkyl,  $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3Si-$ ,  $(C_1-C_5alkyl)_3Si-O-$ , cyano and/or nitro; aryloxy, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,  $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_3$ haloalkoxy- $C_1-C_5$ alkyl,  $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3Si-$ ,  $(C_1-C_5alkyl)_3Si-O-$ , cyano and/or nitro; or by a 5- or 6-membered saturated or unsaturated heterocycle that may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or aryl, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,  $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3Si-$ , cyano, nitro and/or by a 5- or 6-membered heterocycle that may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,  $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_3$ haloalkoxy- $C_1-C_5$ alkyl,  $C_1-C_5$ alkylthio and/or  $C_1-C_5$ haloalkylthio; or a benzo-5- or -6-membered heteroaromatic ring unsubstituted or substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,  $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $(C_1-C_5alkyl)_3Si-$ , cyano, nitro, unsubstituted or substituted aryl, unsubstituted or substituted aryloxy or by an unsubstituted or substituted 5- or 6-membered heterocycle;  $R_{10}$  is hydrogen,  $C_1-C_5$ alkyl, fluorine or chlorine;  $R_{11}$  is hydrogen,  $C_1-C_5$ alkyl,  $C_3-C_6$ alkenyl or  $C_3-C_6$ alkynyl;  $R_{12}$  is  $R_7$  or  $B-R_{13}$ , and  $R_{13}$  is hydrogen;  $C_1-C_{12}$ alkyl unsubstituted or substituted by halogen;  $C_1-C_{12}$ alkoxy;  $C_1-C_5$ haloalkoxy;  $N(R_2)_m$ ; aryl, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,

$C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_3$ haloalkoxy- $C_1-C_5$ alkyl,  
 $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3-Si-$ ,  $(C_1-C_5alkyl)_3-Si-O-$ , cyano, nitro and/or  
 by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms;  
 aryloxy, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,  
 $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_3$ haloalkoxy- $C_1-C_5$ alkyl,  
 $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3-Si-$ ,  $(C_1-C_5alkyl)_3-Si-O-$ , cyano, nitro and/or  
 by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms;  
 or by a 5- or 6-membered saturated or unsaturated heterocycle; or  
 $C_3-C_6$ alkenyl unsubstituted or substituted by halogen;  $C_1-C_{12}$ alkoxy;  $C_1-C_5$ haloalkoxy;  
 $N(R_2)_m$ ; aryl, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  
 $C_1-C_5$ haloalkyl,  $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_3$ haloalkoxy- $C_1-C_5$ alkyl,  
 $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3-Si-$ ,  $(C_1-C_5alkyl)_3-Si-O-$ , cyano, nitro  
 and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms;  
 aryloxy, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,  
 $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_3$ haloalkoxy- $C_1-C_5$ alkyl,  
 $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3-Si-$ ,  $(C_1-C_5alkyl)_3-Si-O-$ , cyano, nitro and/or  
 by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms;  
 or by a 5- or 6-membered saturated or unsaturated heterocycle; or  
 $C_3-C_6$ alkynyl unsubstituted or substituted by halogen;  $C_1-C_{12}$ alkoxy;  $C_1-C_5$ haloalkoxy;  
 $N(R_2)_m$ ; aryl, unsubstituted or mono- or poly-substituted by halogen;  $C_1-C_5$ alkyl,  
 $C_1-C_5$ haloalkyl,  $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_3$ haloalkoxy- $C_1-C_5$ alkyl,  
 $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3-Si-$ ,  $(C_1-C_5alkyl)_3-Si-O-$ , cyano, nitro  
 and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms;  
 aryloxy, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,  
 $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_3$ haloalkoxy- $C_1-C_5$ alkyl,  
 $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  $(C_1-C_5alkyl)_3-Si-$ ,  $(C_1-C_5alkyl)_3-Si-O-$ , cyano, nitro and/or  
 by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms;  
 or by a 5- or 6-membered saturated or unsaturated heterocycle; or  
 aryl, unsubstituted or mono- or poly-substituted by halogen,  $C_1-C_5$ alkyl,  $C_1-C_5$ haloalkyl,  
 $C_1-C_3$ alkoxy- $C_1-C_5$ alkyl,  $C_1-C_3$ alkoxy,  $C_1-C_3$ haloalkoxy,  $C_1-C_5$ alkylthio,  $C_1-C_5$ haloalkylthio,  
 $(C_1-C_5alkyl)_3-Si-$ , cyano and/or nitro; and

B is O,  $NR_9$  or  $S(O)_n$ ;

X is O, NH or NR<sub>9</sub>;

R<sub>9</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl;

n is 0, 1 or 2, and

m is 1 or 2.

The general terms used hereinbefore and hereinafter have the meanings listed below unless defined otherwise:

Aryl is phenyl or naphthyl, preferably phenyl.

An alkyl group may be straight-chain or branched, depending on the number of carbon atoms, and is, for example, methyl, ethyl, n-propyl, isopropyl, n-butyl, sec-butyl, isobutyl, tert-butyl, n-amyl, tert-amyl, 1-hexyl, 3-hexyl, heptyl, octyl, isooctyl, nonyl, decyl or dodecyl.

Alkenyl is to be understood as being straight-chain or branched alkenyl, such as, for example, allyl, methallyl, 1-methylvinyl, 1-butenyl, but-2-en-yl, isopropenyl, hexen-1-yl or 4-methyl-3-pentenyl.

Alkynyl may likewise be straight-chain or branched, depending on the number of carbon atoms, and is, for example, propargyl, butynyl or hexynyl.

Haloalkyl and haloalkoxy may contain identical or different halogen atoms and denote mono- to per-halogenated radicals, such as, for example, fluoromethyl, difluoromethyl, difluorochloromethyl, trifluoromethyl, chloromethyl, dichloromethyl, trichloromethyl, 2,2,2-trifluoroethyl, 2-fluoroethyl, 2-chloroethyl, 2,2,2-trichloroethyl, 3,3,3-trifluoropropyl, bromoethyl, dichlorofluoromethyl etc..

Halogen and halo denote fluorine, chlorine, bromine or iodine, preferably fluorine, chlorine or bromine.

Alkoxy is, for example, methoxy, ethoxy, propyloxy, isopropyloxy, n-butyloxy, isobutyloxy, sec-butyloxy and tert-butyloxy.

Depending on the size of the ring, cycloalkyl is cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl.

A 5- or 6-membered saturated or unsaturated heterocycle denotes a 5- or 6-membered ring that may contain up to 3 hetero atoms, such as nitrogen, sulfur or oxygen. The following list of examples is not exhaustive: piperidines, morpholines, piperazines, pyrrolidines, pyrrolidones, thiazoles, pyrroles, imidazoles, oxazoles, isoxazoles, isothiazoles, triazoles, thiadiazoles, oxdiazoles, furans, thiophenes, pyridines, pyrimidines, pyrazine, triazines, pyrazoles, pyridazines, tetrazoles, thienes, purines.

A benzo-5- or -6-membered heteroaromatic compound denotes, *inter alia*: benzothiazole, benzopyrrole, benzofuran, benzothiophene, benzoxazole, quinoline, isoquinoline, cinnoline, quinazoline, benzimidazole, benzothiadiazole, benzothiene, benzoxdiazole, dihydro benzo-furan, indole, indazole, quinoxaline or isoindole. Also included are partially saturated benzo-5- or -6-membered heteroaromatic compounds. One or two benzene rings may be fused to the heterocyclic rings.

Attention is drawn especially to compounds of formula 2 wherein:

R<sub>1</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl;

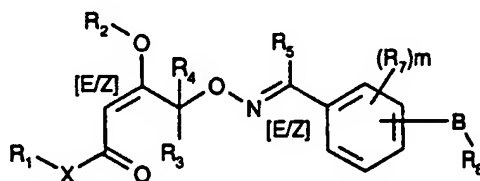
R<sub>2</sub> is C<sub>1</sub>-C<sub>5</sub>alkyl;

R<sub>3</sub>/R<sub>4</sub> are each independently hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl;

R<sub>5</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl;

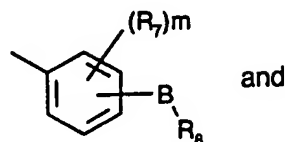
and the remaining radicals are as defined above.

Also to be included are especially compounds of formula 3



( 3 )

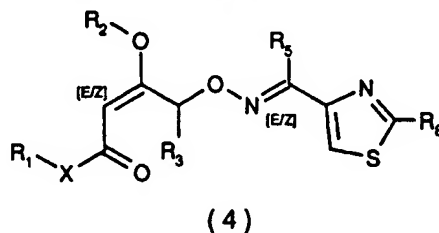
wherein  $R_6$  is a radical



wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $B$ ,  $X$  and  $m$  are as defined above.

In addition, special attention is drawn also to compounds of formula 2 wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $X$  are as defined above and  $R_6$  is especially a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and that may be unsubstituted or mono- or poly-substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_3$ alkoxy,  $C_1$ - $C_3$ haloalkoxy,  $C_1$ - $C_3$ haloalkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ alkylthio,  $C_1$ - $C_5$ haloalkylthio and/or aryl unsubstituted or mono- or poly-substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_3$ alkoxy,  $C_1$ - $C_3$ haloalkoxy,  $C_1$ - $C_3$ haloalkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ alkylthio,  $C_1$ - $C_5$ haloalkylthio,  $(C_1$ - $C_5$ alkyl) $_3$ -Si- and/or cyano; or by a benzofused-5- or -6-membered heteroaromatic ring that also may be unsubstituted or substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-, cyano, nitro, unsubstituted or substituted aryl, unsubstituted or substituted aryloxy or by an unsubstituted or substituted 5- or 6-membered heterocycle.

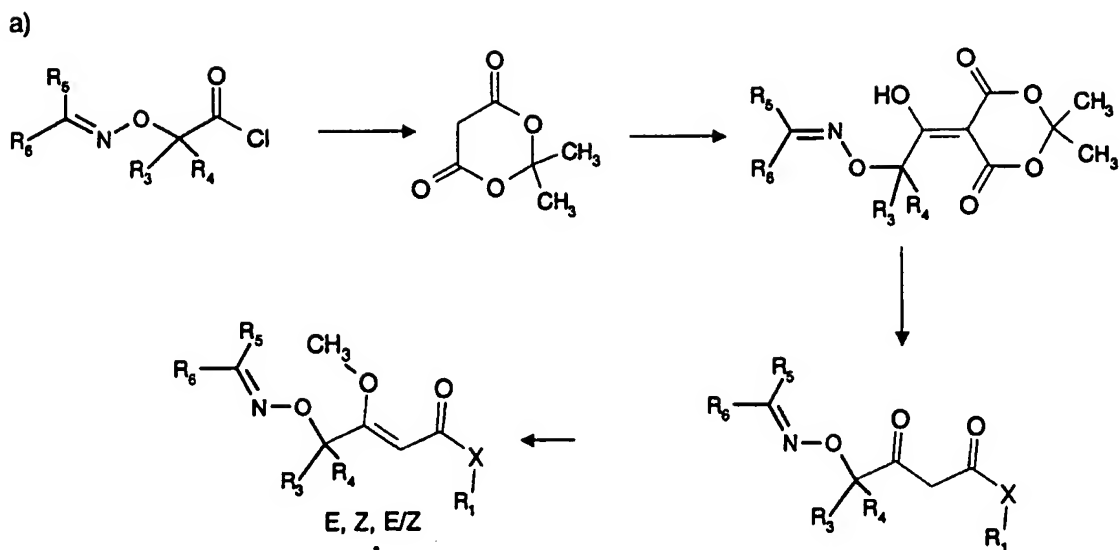
As a sub-group thereof, attention is drawn especially also to compounds of formula 4:



wherein

$R_1$ ,  $R_2$ ,  $R_3$ ,  $R_5$ ,  $R_8$  and  $X$  are as defined above.

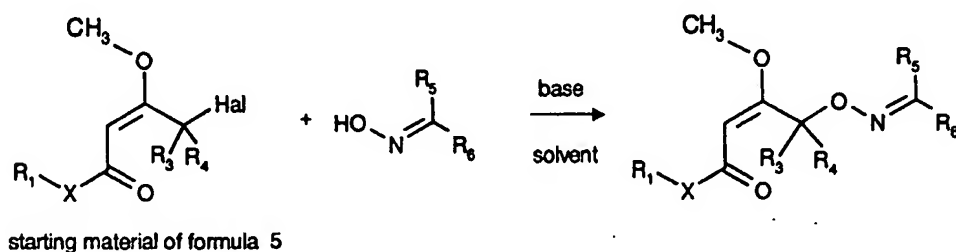
The compounds of formula 1 may be prepared as follows:



Scheme 1

The reaction of acid chlorides with Meldrum's acid is well known, and boiling with alcohols or, for the direct preparation of amides, with the corresponding amines, leads to the corresponding  $\beta$ -keto ester derivatives [e.g. Bang-Chi Chen, *Heterocycles*, **32**, (1991), 529-597; Chwang Siek Pak *et al.* *Synthesis*, 1213, (1992)].  $\beta$ -Keto esters can be converted into the corresponding enol ethers according to known methods. The E- or Z-isomers or mixtures thereof may be formed in those methods [J.F. McGarrity, *Synthesis* (1992), 391; D. Seebach *et al.*, *L. Ann. Chem.* (1975), 2261-2278)]

b) A further preferred method, used especially when  $R_3$  = hydrogen and  $R_4$  = hydrogen or methyl, is depicted in scheme 2:

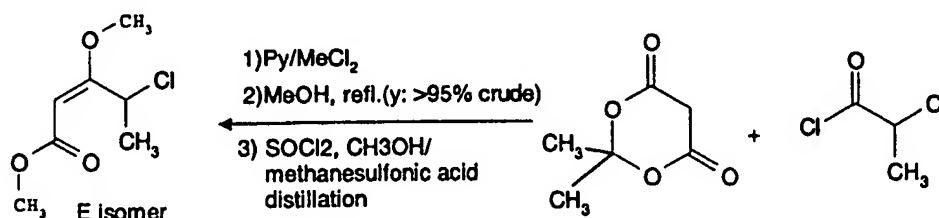


Scheme 2

In that method, a starting material of formula 5 is reacted with an oxime, usually in a solvent in the presence of a base at from  $-10^{\circ}$  to  $150^{\circ}$ . Polar and non-polar solvents are used. The polar solvents preferably used are, for example: dimethyl sulfoxide, dialkylformamides, N-alkylpyrrolidones, tetrahydrofuran, dioxanes, ethyl acetate or alcohols, preferably dimethylformamide, or N-methylpyrrolidone. The bases used are alkali metal carbonates, alkali metal and alkaline earth metal hydrides or non-nucleophilic organic nitrogen bases. Potassium, sodium or caesium carbonate or sodium hydride is preferred.

Starting materials of formula 5 wherein  $R_1$  is alkyl,  $R_3/R_4$  are each hydrogen and X is oxygen are known [J.F. McGarrity, *Synthesis* (1992), 391].

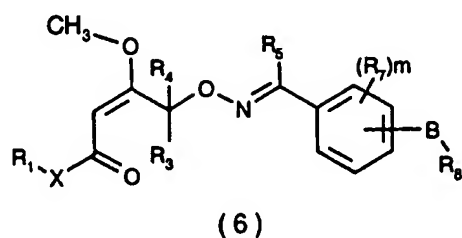
Starting materials of formula 5 wherein  $R_1$  = alkyl,  $R_3$  = hydrogen,  $R_4$  = alkyl, especially methyl, Hal = Cl or Br and X = oxygen are mentioned generally in EP 50019 (14.10.80). The compound wherein  $R_1$  = alkyl and halogen = bromine has been mentioned and prepared [EP 50019 (14.10.80)]. When Hal = chlorine and the remaining radicals have the meanings given, those compounds are novel and as such form part of this invention. When  $X = NR_9$ , the compounds are novel and as such form part of this invention. Preparation is carried out in an analogous manner in accordance with the following reaction scheme 3 :



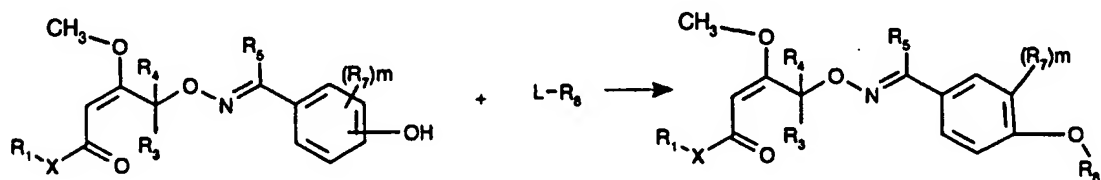
Scheme 3

In that method the desired E isomer is preferentially formed. If primary or secondary amines are used instead of alcohols, the amides may be formed. The process for the formation of the starting material indicated in Scheme 3 is to be understood as being an example. Various other processes for the formation of enol ethers of  $\beta$ -keto esters are known, for example the reaction of the  $\beta$ -keto ester with dimethyl sulfate in the presence of an alkali metal carbonate, especially potassium carbonate, in an inert solvent, such as acetone [D. Seebach *et al.*, *L. Ann. Chem.* (1975), 2261-2278)].

A further process for the preparation of compounds of the general formula 3 comprises converting compounds of formula 6



wherein B is oxygen and  $R_8$  is a protecting group, such as alkyl- or alkylaryl-silyl or alkoxyalkyl or aralkyloxyalkyl or benzyl, by means of suitable measures for the removal of the protecting groups, into compounds in which  $R_8$  is hydrogen. Generally known methods, as described, for example, in : "Protecting Groups", Philip J. Kocienski, Thieme 1994, are used for the removal of the protecting groups.



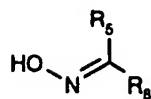
Scheme 4

L is a leaving group, such as, for example: chlorine, bromine, iodine, methylsulfonyl, tosyl, alkylsulfonyl, arylsulfonyl or tetraalkylammonium.

The said phenols are usually reacted in a solvent in the presence of a base at from  $-10^{\circ}$  to  $150^{\circ}$ . Polar and non-polar solvents are used. The polar solvents preferably used are, for example: dialkylformamides, N-alkylpyrrolidones, tetrahydrofuran, dioxanes, ethyl acetate or alcohols, preferably dimethylformamide, or N-methylpyrrolidone. The bases used are alkali metal carbonates, alkali metal and alkaline earth metal hydrides or non-nucleophilic nitrogen bases. Potassium, sodium or caesium carbonate or sodium hydride is preferred.

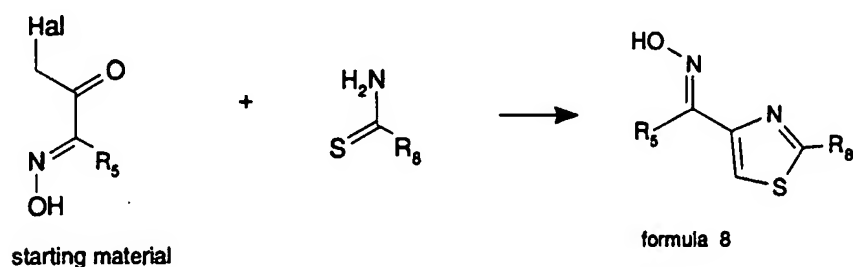
The oximes of formula 7 are prepared according to generally known methods from the corresponding ketones or aldehydes and hydroxylammonium salts:





(7)

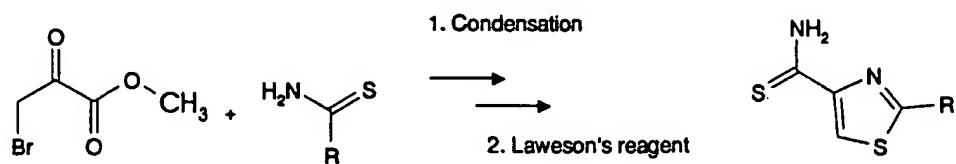
Oxime intermediates wherein  $R_5$  may have the meaning given and  $R_6$  is unsubstituted or substituted thiazole are novel and form part of this invention. The preparation is carried out in accordance with the following general scheme 5:



Scheme 5

The intermediates of formula 8 are novel and also form part of the invention.

The preparation of the starting material and its conversion to thiazoles is known [Uhlig *et al.*, Z. Chem., 5, (1965), 232; US P 2 821 555, (1957)]. The corresponding thioamides are prepared according to generally known methods, either by sulfurization, for example with Laweson's reagent, of carboxylic acid amides, or by the addition of hydrogen sulfide to nitriles. If, in turn,  $R_6$  is unsubstituted or substituted thiazole, the corresponding thiazolo-thioamides can be prepared in accordance with the following reaction scheme 6:



Scheme 6

Halopyruvic acid derivatives are reacted with thioamides in a suitable solvent to form the corresponding thiazole derivatives. The desired thioamide derivatives are obtained by sulfurization.

It has now surprisingly been found that the compounds of formula 1 according to the invention in practice exhibit a very favourable spectrum of activity in the protection of plants against diseases caused either by fungi or by bacteria and viruses. The compounds of formula 1 are suitable for the control of phytopathogenic microorganisms, especially fungi. The compounds according to the invention are distinguished by excellent activity at low rates of concentration, are well tolerated by plants and are environmentally friendly. They have very advantageous curative and preventive properties and are used in the protection of a large number of crop plants. With the compounds of formula 1 it is possible to inhibit or destroy the pests that occur on plants or parts of plants (the fruit, blossom, leaves, stems, tubers or roots) of various crops of useful plants, while the parts of plants that grow later are also protected, for example, against phytopathogenic fungi. The compounds of formula 1 may also be used as dressings in the treatment of seed (fruit, tubers, grains) and plant cuttings to provide protection against fungal infections as well as against phytopathogenic fungi which occur in the soil.

Compounds of formula 1 are effective, for example, against phytopathogenic fungi belonging to the following classes: Fungi imperfecti (e.g. Botrytis, Pyricularia, Helminthosporium, Fusarium, Septoria, Cercospora, Pseudocercosporielle and Alternaria); Basidiomycetes (e.g. Rhizoctonia, Hemileia, Puccinia); Ascomycetes (e.g. Venturia, Erysiphe, Podosphaera, Monilinia, Uncinula); but especially against Oomycetes (e.g. Phytophthora, Peronospora, Pseudoperonospora, Bremia, Pythium, Plasmopara).

The activity of the compounds of formula 1 according to the invention and of compositions comprising them may be significantly broadened and adapted to the prevailing circumstances by the addition of other fungicides and/or insecticides.

Target crops to be protected within the scope of the present invention include e.g. the following species of plants: cereals (wheat, barley, rye, oats, rice, maize, sorghum and related crops); beet (sugar beet and fodder beet); pomes, stone fruit and soft fruit (apples, pears, plums, peaches, almonds, cherries, strawberries, raspberries and blackberries); leguminous plants (beans, lentils, peas, soybeans); oil plants (rape, mustard, poppy, olives,

sunflowers, coconut, castor oil plants, cocoa beans, groundnuts); cucurbitaceae (marrows, cucumber, melons); fibre plants (cotton, flax, jute, hemp); citrus fruit (oranges, lemons, grapefruit, mandarins); vegetables (spinach, lettuce, asparagus, cabbages, carrots, onions, tomatoes, potatoes, paprika); lauraceae (avocados, cinnamon, camphor); and plants such as tobacco, nuts, coffee, sugar cane, tea, pepper, vines, hops, bananas and natural rubber plants, as well as ornamentals and flowers.

The compounds of formula 1 are usually used in the form of compositions and may be applied to the area or plant to be treated simultaneously with or in succession with other active ingredients. Those other active ingredients may be fertilisers, micronutrient donors or other preparations that influence plant growth. It is also possible to use selective herbicides or insecticides, fungicides, bactericides, nematocides or molluscicides or mixtures of several of those preparations, where appropriate together with further carriers, surfactants or other application-promoting additives that are customary in formulation technology.

Suitable carriers and surfactants may be solid or liquid and are substances that are expedient in formulation technology, for example natural or regenerated mineral substances, solvents, dispersing agents, wetting agents, tackifiers, thickening agents, binders or fertilisers.

A preferred method of applying a compound of formula 1 or an agrochemical composition that comprises at least one of those compounds is foliar application. The frequency and rate of application depend on the risk of infestation by the pathogen in question. The compounds of formula 1 may alternatively be applied to the seed grains (coating), either by impregnating the seeds with a liquid preparation of the active ingredient or by coating them with a solid preparation.

The compounds of formula 1 are used in unmodified form or preferably together with the adjuvants conventionally employed in formulation technology. For that purpose they are advantageously formulated in known manner, for example into emulsifiable concentrates, coatable pastes, directly sprayable or dilutable solutions, dilute emulsions, wettable powders, soluble powders, dusts or granules, and also encapsulations in e.g. polymer substances. As with the nature of the compositions, the methods of application, such as

spraying, atomising, dusting, scattering, coating or pouring, are chosen in accordance with the intended objectives and the prevailing circumstances.

Favourable rates of application are generally from 1 g to 2 kg of active ingredient (a.i.) per hectare (ha), preferably from 10 g to 1 kg a.i./ha, especially from 25 g to 750 g a.i./ha. When used as seed dressings, concentrations of from 0.001 g to 1.0 g of active ingredient per kg of seed are advantageously employed.

The formulations, i.e. the compositions, preparations or mixtures comprising a compound of formula I and, where appropriate, a solid or liquid adjuvant, are prepared in known manner, e.g. by intimately mixing and/or grinding the active ingredient with extenders, such as solvents, solid carriers and, where appropriate, surface-active compounds (surfactants).

Suitable solvents are: aromatic hydrocarbons, preferably the fractions containing 8 to 12 carbon atoms, such as xylene mixtures or substituted naphthalenes, phthalates, such as isobutyl or dioctyl phthalate, aliphatic hydrocarbons, such as cyclohexane, or paraffins, alcohols and glycols and their ethers and esters, such as ethanol, ethylene glycol, ethylene glycol monomethyl or monoethyl ester, ketones, such as cyclohexanone, strongly polar solvents, such as N-methylpyrrolidone, dimethyl sulfoxide or dimethylformamide, and also vegetable oils or epoxidised vegetable oils, such as epoxidised coconut oil or soybean oil.

The solid carriers used e.g. for dusts and dispersible powders are normally natural mineral fillers, such as calcite, talcum, kaolin, montmorillonite or attapulgite. In order to improve the physical properties it is also possible to add highly dispersed silicic acid or highly dispersed absorbent polymers. Suitable granulated adsorptive carriers are porous types, for example pumice, broken brick, sepiolite or bentonite; and suitable non-sorbent carriers are, for example, calcite or sand. In addition, a great number of pregranulated materials of inorganic or organic nature can be used, such as dolomite or pulverised plant residues.

Depending on the nature of the compound of formula I to be formulated, suitable surface-active compounds are non-ionic, cationic and/or anionic surfactants having good emulsifying, dispersing and wetting properties. The term "surfactants" will also be understood as including mixtures of surfactants.

Both so-called water-soluble soaps and water-soluble synthetic surface-active compounds are suitable anionic surfactants.

Examples of non-ionic surfactants are nonylphenol polyethoxyethanols, castor oil polyglycol ethers, polypropylene/polyethylene oxide adducts, tributylphenoxypolyethylene ethanol, polyethylene glycol and octylphenoxypolyethoxyethanol.

Fatty acid esters of polyethylene sorbitan, e.g. polyoxyethylene sorbitan trioleate, are also suitable.

Cationic surfactants are preferably quaternary ammonium salts which contain, as N-substituent, at least one C<sub>8</sub>-C<sub>22</sub>alkyl radical and, as further substituents, unsubstituted or halogenated lower alkyl, benzyl or hydroxy-lower alkyl radicals.

Other surfactants customarily used in formulation technology are known to the person skilled in the art or can be found in the relevant specialist literature.

The agrochemical compositions usually contain 0.01 to 99 % by weight, especially 0.1 to 95 % by weight, of a compound of formula 1, 99.99 to 1 % by weight, especially 99.9 to 5 % by weight, of a solid or liquid adjuvant, and 0 to 25 % by weight, especially 0.1 to 25 % by weight, of a surfactant.

Whereas commercial products are preferably formulated as concentrates, the end user will normally employ dilute formulations.

The compositions may also comprise further ingredients, such as stabilisers, anti-foams, viscosity regulators, binders or tackifiers, as well as fertilisers or other active ingredients for obtaining special effects.

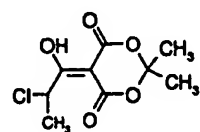
The following Examples illustrate the above-described invention without limiting the scope thereof. Temperatures are given in degrees Celsius. The following abbreviations are used: M.p. = melting point; "NMR" denotes nuclear magnetic resonance spectrum; MS = mass

spectrum; “ %” denotes percent by weight unless the concentrations in question are quoted in another unit.

Preparation Examples:

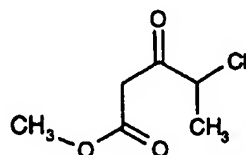
P1. Preparation of 4-chloro-3-methoxypent-2-enecarboxylic acid methyl ester

a) 5-(2-Chloro-1-hydroxypropylidene)-2,2-dimethyl[1,3]dioxane-4,6-dione



74.9 g of malonic acid cycl.-isopropylidene ester (Meldrum's acid) are introduced into 350 ml of methylene chloride. 74.7 g of pyridine are added thereto at from 0 to 5°C. 60.0 g of 2-chloropropionic acid chloride are then added dropwise at the same temperature in the course of 40 minutes and the mixture is subsequently stirred at room temperature for 3 hours. The reaction mixture is then washed twice with hydrochloric acid/ice, and the organic phase is dried over sodium sulfate, filtered and concentrated using a rotary evaporator. A dark-brownish red oil is obtained which is used without being further purified. Yield : 110 g of crude product.

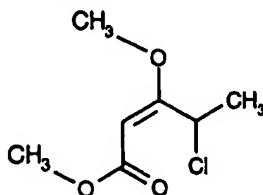
b) 4-Chloro-3-oxopentanecarboxylic acid methyl ester



110 g of 5-(2-chloro-1-hydroxypropylidene)-2,2-dimethyl[1,3]dioxane-4,6-dione are dissolved in 300 ml of methanol and the solution is slowly heated to reflux temperature. A lively evolution of gas is established. When the evolution of gas has ceased, the reaction mixture is concentrated using a rotary evaporator, and the resulting dark-brown oil is applied to a silica gel column (1.2 kg) and eluted with hexane:tert-butyl methyl ether in a ratio of 5:1.

Yield: 45.5 g of light-yellow oil. NMR (TMS/ $\text{CDCl}_3$ ) : 1.62 ppm (d, 3H), 3.75 ppm (s, 3H), 3.69 AB (2H), 4.5 ppm (q, 2H).

c) 4-Chloro-3-methoxypent-2-enecarboxylic acid methyl ester



35.8 g of thionyl chloride are added dropwise to 35 g of methanol at from  $-5$  to  $-10^\circ\text{C}$  over a period of 45 minutes and then the mixture is stirred for 10 minutes at  $-10^\circ\text{C}$ . 45.0 g of 4-chloro-3-oxo-pentanecarboxylic acid methyl ester are subsequently added dropwise in the course of 20 minutes and the reaction mixture is allowed to warm up to room temperature. The mixture is then stirred for a further 60 minutes and subsequently concentrated using a rotary evaporator. After the addition of 0.27 g of methanesulfonic acid, fractional distillation is carried out. At from  $124$  to  $125^\circ\text{C}$  and 55 mbar, 8.8 g of pure product (GC) are obtained. Mixed fractions are chromatographed on silica gel with hexane:tert-butyl methyl ether (95:5). In that manner a further 13.0 g of pure product are obtained. After a while the oil obtained solidifies. According to NMR (TMS/ $\text{CDCl}_3$ ) analysis, the product is [E]-4-chloro-3-methoxypent-2-enecarboxylic acid methyl ester.

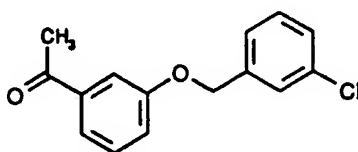
NMR (TMS/ $\text{CDCl}_3$ ) : 1.62 ppm (d, 3H), 3.66 ppm (s, 3H), 3.69 ppm (s, 3H), 5.04 ppm (s, 1H), 6.16 ppm (q, 1H)

The following can be prepared in an analogous manner:

4-bromo-3-methoxypent-2-enecarboxylic acid methyl ester,  
4-chloro-3-methoxypent-2-enecarboxylic acid ethyl ester,  
4-chloro-3-methoxypent-2-enecarboxylic acid butyl ester and  
4-chloro-3-methoxypent-2-enecarboxylic acid N,N-dimethylamide.

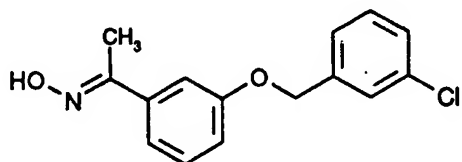
P2. Preparation of 4-{1-[3-(3-chlorobenzoyloxy)-phenyl]-ethylideneaminoxy}-3-methoxypent-2-enecarboxylic acid methyl ester:

a) 3-(3-Chlorobenzoyloxy)-acetophenone



6.81 g of 3-hydroxyacetophenone and 7.19 g of potassium carbonate are introduced into 25 ml of methyl ethyl ketone. 10.27 g of 3-chlorobenzyl bromide are added and the mixture is refluxed overnight. The solid components are filtered off and the filtrate is concentrated using a rotary evaporator. Yield: 13.5 g of brown oil, which is pure according to a thin layer chromatogram and is further used without being purified. NMR (TMS/ $\text{CDCl}_3$ ): 2.6 ppm (s, 3H), 5.06 ppm (s, 1H), 7.1 - 7.6 ppm (m, 8H).

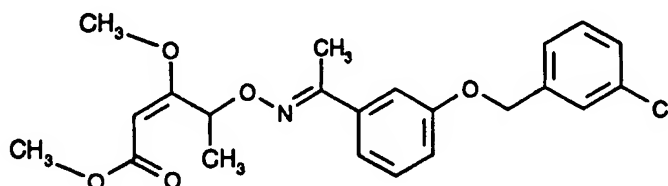
b) Oxime of 3-(3-chlorobenzoyloxy)-acetophenone



13 g of 3-(3-chlorobenzoyloxy)-acetophenone and 40 ml of pyridine are introduced into 40 ml of methanol. After the addition of 3.81 g of hydroxylammonium chloride, the mixture is heated at 75°C for 6 hours with stirring. The reaction mixture is then concentrated using a rotary evaporator, ice and sodium hydrogen carbonate solution are added, and the mixture is extracted twice with ethyl acetate. The solution is then washed with sodium hydrogen carbonate solution and brine, dried over sodium sulfate, filtered, and concentrated using a rotary evaporator. The crude product obtained is purified by means of flash chromatography (hexane:ethyl acetate). 12.3 g of a slightly yellow solid are obtained, m.p. 54 - 57 °C. NMR (TMS/ $\text{CDCl}_3$ ): 2.28 ppm (s, 3H), 5.04 ppm (s, 2H), 6.94 - 7.44 (m, 8H), 8.7 (broad signal, 1H).



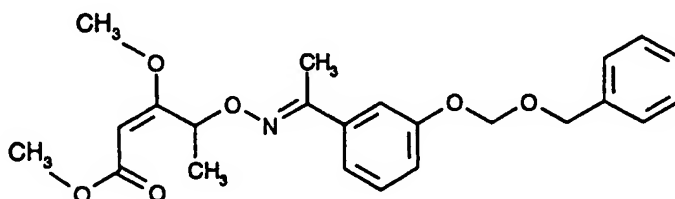
c) [E]-4-[1-[3-(3-Chlorobenzoyloxy)-phenyl]-ethylideneaminoxyl]-3-methoxypent-2-ene-carboxylic acid methyl ester:



377 mg of sodium hydride (approx. 50 % in oil) are introduced into 40 ml of dry dimethylformamide.

4 g of 3-(3-chlorobenzoyloxy)-acetophenone oxime dissolved in 20 ml of dimethylformamide are added dropwise in the course of 5 minutes and the mixture is then stirred at room temperature until the evolution of gas has ceased (approximately 10 minutes). 2.6 g of 4-chloro-3-methoxypent-2-enecarboxylic acid methyl ester dissolved in 10 ml of dimethyl formamide are added dropwise and, after the addition of a catalytic amount of potassium iodide, the mixture is stirred for 16 hours at room temperature. The reaction mixture is then cooled, and 6 ml of saturated ammonium chloride solution, water and brine are added. The resulting aqueous suspension is extracted twice with ethyl acetate. The ethyl acetate extract is subsequently washed with water and brine, dried over sodium sulfate and filtered, and the solvent is removed using a rotary evaporator. The resulting oil is purified by flash chromatography (hexane/ethyl acetate 40:1 to 10:1). Yield: 3.85 g of colourless oil. NMR (TMS/ $\text{CDCl}_3$ ): 1.48 ppm (d, 2H), 2.24 ppm (s, 3H), 3.64 ppm (s, 3H), 3.69 ppm (s, 3H), 5.01 ppm (s, 2H), 5.09 ppm (s, 1H), 6.18 ppm (q, 1H); 6.88-7.47 ppm (m, 8H).

P3. Preparation of 4-[1-(3-benzoyloxymethoxyphenyl)-ethylideneaminoxyl]-3-methoxypent-2-enecarboxylic acid methyl ester:



a) 3-Benzyloxymethoxy-acetophenone: 2.1 g of sodium hydride (50 % in oil) are introduced into 65 ml of dimethylformamide and subsequently 5 g of 3-hydroxy-acetophenone dissolved in 15 ml of dimethylformamide are added dropwise at 0 °. The mixture is then stirred at room temperature for approximately one hour. 6.5 g of benzyloxymethyl chloride are slowly added dropwise and the mixture is then stirred at room temperature for 1 hour. The reaction mixture is carefully poured into water, acidified with 1N hydrochloric acid and extracted twice with ethyl acetate. The ethyl acetate solution is washed with brine and dried over sodium sulfate and the solvent is removed using a rotary evaporator. Purification by flash chromatography (hexane:ethyl acetate 40:1 to 20:1) yields 7.6 g of a colourless oil. NMR (TMS/ $\text{CDCl}_3$ ): 2.57 ppm (s, 3H), 4.70 ppm (s, 2H), 5.29 ppm (s, 2H), 7.22 - 7.67 ppm (m, 9H).

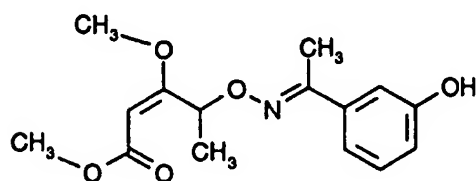
b) 3-Benzyloxymethoxy-acetophenone oxime: 19 g of 3-benzyloxymethoxy-acetophenone and 40 ml of pyridine are introduced into 40 ml of methanol. 6.2 g of hydroxylammonium hydrochloride are added and the reaction mixture is stirred at 75°C for 16 hours. A major portion of the solvent is then distilled off using a rotary evaporator, ice and sodium hydrogen carbonate solution are added to the residue, and the mixture is extracted twice with ethyl acetate. The extract is then washed with water and brine, dried over sodium sulfate and filtered, and the solvent is removed by distillation, yielding 23.35 g of a brown oil which is used in the next step without being further purified. NMR (TMS/ $\text{CDCl}_3$ ) : 2.29 ppm (s, 3H), 4.70 ppm (s, 2H), 5.32 ppm (s, 2H), 7.00-7.36 ppm (m, 9H), 8.28 ppm (s, 1H).

0.7 g of sodium hydride (50 % in oil) are suspended in 45 ml of dimethylformamide. 3.6 g of 3-benzyloxymethoxy-acetophenone oxime dissolved in 10 ml of dimethylformamide are added dropwise in the course of 5 minutes, and the mixture is stirred at room temperature until the evolution of hydrogen subsides. 2.4 g of chloro-3-methoxypent-2-enecarboxylic acid methyl ester dissolved in 15 ml of dimethylformamide are then added dropwise, followed by the addition of a catalytic amount of potassium iodide. The mixture is stirred at room temperature for 3 hours and at 50°C for 1 hour. After cooling to from 5 to 10°C, 5 ml of saturated ammonium chloride solution are added. The reaction mixture is poured into ice/water and extracted twice with ethyl acetate, the organic phase is subsequently washed with water and brine, dried over sodium sulfate and filtered, and the solvent is distilled off using a rotary evaporator. The resulting oil is purified by flash chromatography (hexane:ethyl acetate = 40:1 to 10:1). 2.59 g of a colourless oil are obtained.

NMR (TMS/ $\text{CDCl}_3$ ) : 1.45 ppm (d, 3H), 2.24 ppm (s, 3H), 3.64 ppm (s, 3H), 3.69 ppm (s, 3H), 4.70 ppm (s, 2H), 5.06 ppm (s, 1H), 5.26 ppm (s, 2H), 6.16 ppm (q, 2H), 7.00-7.36 ppm (m, 9H).

Compounds of Tables 1 to 5 are prepared in an analogous manner.

P4. Preparation of 4-[1-(3-hydroxyphenyl)-ethylideneaminoxy]-3-methoxypent-2-ene-carboxylic acid methyl ester.



1 g of 4-[1-(3-(benzyloxy)-phenyl)ethylideneaminoxy]-3-methoxypent-2-enecarboxylic acid methyl ester are dissolved in 15 ml of tetrahydrofuran; 100 mg of catalyst (5 % palladium on carbon) are added and the mixture is hydrogenated at 20-25°C and normal pressure. When hydrogenation is complete, the catalyst is removed by filtration and subsequently washed, and the reaction mixture is concentrated using a rotary evaporator. Flash chromatography on silica gel with hexane : ethyl acetate = 3 : 1 yields 500 mg of a colourless oil. NMR (TMS,  $\text{CDCl}_3$ ) : 1.45 ppm (d, 3H), 2.18 ppm (s, 3H), 3.64 (s, 3H), 3.69 ppm (s, 3H), 5.09 (s, 1H), 6.07 ppm (broad signal, ~1H), 6.10 ppm (q, 1H), 6.72-7.19 (m, 4H).

The 2- and 4-hydroxyphenyl compounds can be produced in an analogous manner.

4-[1-(3-Hydroxyphenyl)-ethylideneaminoxy]-3-methoxypent-2-enecarboxylic acid methyl esters may be used as intermediates.

430 mg of 4-[1-(3-hydroxyphenyl)-ethylideneaminoxy]-3-methoxypent-2-enecarboxylic acid methyl ester are introduced into 20 ml of methyl ethyl ketone; 220 mg of potassium carbonate are added, followed by 180 mg of allyl bromide dissolved in 5 ml of methyl ethyl ketone. After the addition of a catalytic amount of potassium iodide the mixture is stirred overnight at 70°C. The reaction mixture is poured into ice/water and extracted with ethyl acetate, then washed with brine and dried over sodium sulfate, and the solvent is subsequently distilled off using a rotary evaporator. 450 mg of a light-yellow oil are

obtained. NMR (TMS,  $\text{CDCl}_3$ ) : 1.48 ppm (d, 3H), 2.24 ppm (s, 3H), 3.66 ppm (s, 3H), 3.72 ppm (s, 3H), 4.53 ppm (m, 2H), 5.09 ppm (s, 1H), 5.23-5.46 ppm (m, 2H), 6.02 ppm (m, 1H), 6.16 ppm (q, 1H), 6.80-7.33 ppm (m, 4H).

Compounds of Tables 1 and 2 can be prepared in an analogous manner.

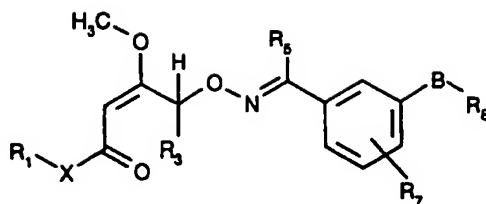
P5. Preparation of 1-[2-(2,4-dichlorophenyl)-thiazol-4-yl]-ethanone oxime.

12.3 g of 2,4-dichlorothiobenzamide are introduced into 100 ml of ethanol and then 10.8 g of 1-bromobutane-2,3-dione-3-oxime are added. The temperature of the reaction mixture slowly rises to approximately 30°C, a suspension forming after approximately 20 minutes. The suspension is stirred overnight at room temperature and is then poured into ice/water/10 % potassium carbonate solution and stirred well. The precipitate formed is filtered off, washed with water and sucked dry. The fine powder is dissolved in tetra hydrofuran and filtered through Hyflo until clear, and the solvent is distilled off using a rotary evaporator. 7.7 g of grey powder are obtained, m.p. 158-162°C.

Compounds of Table 7 are prepared in an analogous manner.

Table 1:

General formula Table 1



Comp. No.	R <sub>1</sub>	X	R <sub>3</sub>	R <sub>5</sub>	R <sub>7</sub>	B	R <sub>8</sub>	Phys. data m.p. °C
1.01	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	74.5-75.5
1.02	-H	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
1.03	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	124-126
1.04	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
1.05	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	134-136
1.06	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	oil
1.07	-H	NH	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
1.08	-CH <sub>3</sub>	NH	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
1.09	-(CH <sub>3</sub> ) <sub>2</sub>	N	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
1.10	-H	O	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
1.11	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
1.12	-H	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
1.13	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
1.14	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
1.15	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
1.16	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-chlorophenyl	oil

1.17	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-chlorophenyl	
1.18	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl	
1.19	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl	oil
1.20	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl	
1.21	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl	
1.22	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-tert-butylphenyl	oil
1.23	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-tert-butylphenyl	
1.24	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-tert-butylphenyl	
1.25	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-bromophenyl	oil
1.26	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-bromophenyl	
1.27	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-bromophenyl	
1.28	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-bromophenyl	
1.29	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-CH <sub>3</sub> -phenyl	oil
1.30	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CH <sub>3</sub> -phenyl	oil
1.31	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CH <sub>3</sub> -phenyl	
1.32	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -β-naphthyl	oil
1.33	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CF <sub>3</sub> -phenyl	
1.34	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CF <sub>3</sub> -phenyl	
1.35	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>2</sub> -phenyl	
1.36	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-bromophenyl	
1.37	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-bromophenyl	oil
1.38	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-bromophenyl	oil
1.39	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-CH <sub>3</sub> -phenyl	oil
1.40	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-CH <sub>3</sub> -phenyl	
1.41	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-OCHF <sub>2</sub> -phenyl	oil

1.42	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-CN-phenyl	
1.43	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CN-phenyl	
1.44	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-NO <sub>2</sub> -phenyl	
1.45	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-NO <sub>2</sub> -phenyl	
1.46	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3,5-bis-CF <sub>3</sub> )- phenyl	
1.47	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-dichlorophenyl	
1.48	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-dichlorophenyl	
1.49	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-dichlorophenyl	
1.50	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-dichlorophenyl	
1.51	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-difluorophenyl	
1.52	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-difluorophenyl	
1.53	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-fluorophenyl	
1.54	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl	oil
1.55	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl	
1.56	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl	
1.57	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl	
1.58	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-chlorophenyl	
1.59	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,4-dichlorophenyl	oil
1.60	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,4-dichlorophenyl	
1.61	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-methoxyphenyl	83 - 86
1.62	-NH <sub>2</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-methoxyphenyl	
1.63	-NHCH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-methoxyphenyl	oil
1.64	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-methoxyphenyl	
1.65	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-methoxyphenyl	

1.66	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-methoxyphenyl	
1.67	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-phenyl-phenyl	oil
1.68	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,4,5-trimethoxy-phenyl	88 - 91
1.69	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-phenoxyphenyl	oil
1.70	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-phenoxyphenyl	
1.71	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-phenoxyphenyl	
1.72	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4,6-trimethyl-phenyl	oil
1.73	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,5-dimethyl-phenyl	oil
1.74	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,5-dimethoxy-phenyl	wax
1.75	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-ethoxyphenyl	
1.76	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,4-methylene-dioxy-phenyl	
1.77	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-allyl	oil
1.78	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-propargyl	
1.79	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-butyl	
1.80	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>3</sub> -phenyl	
1.81	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>2</sub> -O-phenyl	
1.82	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>2</sub> -CN	
1.83	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-hexyl	
1.84	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-pentyl	
1.85	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-2-butyl	



1.86	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -phenyl
1.87	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -4-chlorophenyl
1.88	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	S	-CH <sub>2</sub> -phenyl
1.89	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
1.90	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
1.91	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
1.92	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
1.93	-ethyl	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
1.94	-ethyl	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -phenyl
1.95	-ethyl	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-chlorophenyl
1.96	-ethyl	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl
1.97	-ethyl	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-CH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl
1.98	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-F	O	-CH <sub>2</sub> -phenyl
1.99	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Br	O	-CH <sub>2</sub> -phenyl
1.100	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-CH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl
1.101	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-Cl	O	-CH <sub>2</sub> -phenyl
1.102	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-F	O	-CH <sub>2</sub> -phenyl
1.103	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-CH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl
1.104	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-CH <sub>3</sub>	O	-CH <sub>2</sub> -4-chlorophenyl
1.105	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-CH <sub>3</sub>	O	-CH <sub>2</sub> -4-fluorophenyl
1.106	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-F	O	-CH <sub>2</sub> -4-chlorophenyl
1.107	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-Cl	O	-CH <sub>2</sub> -4-chlorophenyl
1.108	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-F	O	-CH <sub>2</sub> -4-methoxy- phenyl
1.109	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-Cl	O	-CH <sub>2</sub> -4-fluorophenyl

1.110	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-F	O	-CH <sub>2</sub> -phenyl	
1.111	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-fluorophenyl	oil
1.112	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-chlorophenyl	oil
1.113	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH(CH <sub>3</sub> )-phenyl	oil
1.114	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-H	oil
1.115	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	S	-CH <sub>2</sub> -phenyl	
1.116	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	NH	-CH <sub>2</sub> -2-chlorophenyl	
1.117	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	NH	-CH <sub>2</sub> -phenyl	
1.118	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	NMe	-CH <sub>2</sub> -phenyl	
1.119	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-fluorophenyl	
1.120	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-methoxyphenyl	
1.121	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-CH <sub>2</sub> -phenyl	
1.122	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-n-propyl	-H	O	-CH <sub>2</sub> -phenyl	
1.123	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-n-butyl	-H	O	-CH <sub>2</sub> -phenyl	
1.124	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-isopropyl	-H	O	-CH <sub>2</sub> -phenyl	
1.125	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-H	
1.126	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-n-propyl	-H	O	-H	
1.127	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-n-butyl	-H	O	-H	
1.128	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-isopropyl	-H	O	-H	
1.129	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-allyl	
1.130	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-n-propyl	-H	O	-allyl	
1.131	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-n-butyl	-H	O	-allyl	
1.132	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-isopropyl	-H	O	-allyl	
1.133	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-CH <sub>2</sub> -4-chlorophenyl	
1.134	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-n-propyl	-H	O	-CH <sub>2</sub> -4-chlorophenyl	

1.135	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-n-butyl	-H	O	-CH <sub>2</sub> -4-chlorophenyl	
1.136	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-isopropyl	-H	O	-CH <sub>2</sub> -4-chlorophenyl	
1.137	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4OCH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl	
1.138	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4OCH <sub>3</sub>	O	-H	
1.139	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4OCH <sub>3</sub>	O	-allyl	
1.140	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4OCH <sub>3</sub>	O	-CH <sub>2</sub> -4-chlorophenyl	
1.141	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-5-benzyl	O	-CH <sub>2</sub> -phenyl	
1.142	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-H	
1.143	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-hexyl	
1.144	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-butyl	
1.145	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-allyl	
1.146	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-propargyl	
1.147	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -phenyl	
1.148	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -4-fluorophenyl	
1.149	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -2,4-dichloro-phenyl	
1.150	-CH <sub>3</sub>	O	-H	-H	-H	O	-CH <sub>2</sub> -phenyl	
1.151	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -O-CH <sub>2</sub> -phenyl	oil
1.152	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -cyclopropyl	oil
1.153	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>8</sub> -CH <sub>3</sub>	oil
1.154	-ethyl	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	oil
1.155	-n-butyl	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -phenyl	oil
1.156	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -2-chloro,6-fluoro-phenyl	oil

1.157	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-CH <sub>2</sub> -2,4-dichloro-phenyl	oil
1.158	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-CH <sub>2</sub> -3-fluorophenyl	oil
1.159	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-CH <sub>2</sub> -2-chlorophenyl	oil
1.160	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-CH <sub>2</sub> -4,5-dichloro-phenyl	oil
1.161	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-CH <sub>2</sub> -3-CH <sub>3</sub> -phenyl	oil
1.162	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	oil
1.163	-CH <sub>3</sub>	O	-ethyl	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	oil
1.164	-CH <sub>3</sub>	O	-ethyl	-H	-H	O	-CH <sub>2</sub> -3-CH <sub>3</sub> -phenyl	oil
1.165	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -C(NOCH <sub>3</sub> )-4-CH <sub>3</sub> -phenyl	oil
1.166	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -4,5-dichloro-phenyl	oil
1.167	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -2-chlorophenyl	oil
1.168	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -3-fluorophenyl	oil
1.169	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -2,4-dichloro-phenyl	97-98
1.170	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -3-fluorophenyl	62-63
1.171	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -2-chlorophenyl	oil
1.172	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -4,5-dichloro-phenyl	90
1.173	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -3-CH <sub>3</sub> -phenyl	57
1.174	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -4-CH <sub>3</sub> O-phenyl	75-77
1.175	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -4-phenyl-phenyl	oil

1.176	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -2,5-dimethyl- phenyl	oil
1.177	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -3,5-dimethoxy- phenyl	oil
1.178	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-H	oil
1.179	-CH <sub>3</sub>	O	-ethyl	-CH <sub>3</sub>	-H	O	-H	oil
1.180	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	oil
1.181	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-2-(3,5-dichloro)- pyridine	oil
1.182	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -5-(2-chloro)- thiazole	wax
1.183	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -5-(2-chloro,4-CF <sub>3</sub> )- thiazole	78-80
1.184	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-2-(5-CF <sub>3</sub> )-pyridine	oil
1.185	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-4-(5-chloro,6-ethyl)- pyrimidine	oil
1.186	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-2-(3-fluoro,5-chloro)- pyridine	oil
1.187	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-2-(3-chloro,5-CF <sub>3</sub> )- pyridine	oil
1.188	-CH <sub>3</sub>	O	-ethyl	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4-dichloro- phenyl	oil
1.189	-CH <sub>3</sub>	O	-ethyl	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-fluorophenyl	oil
1.190	-CH <sub>3</sub>	O	-ethyl	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-chlorophenyl	oil
1.191	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -2,4-dichloro- phenyl	wax

1.192	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -3-fluorophenyl	wax
1.193	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -2-chlorophenyl	oil
1.194	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -4,5-dichloro- phenyl	oil
1.195	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -3-CH <sub>3</sub> -phenyl	oil
1.196	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -4-CH <sub>3</sub> O-phenyl	wax
1.197	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -4-phenoxyphenyl	oil
1.198	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -2,5-dimethyl- phenyl	oil
1.199	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -3,5-dimethoxy- phenyl	oil
1.200	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-2-(3,5-dichloro)- pyridine	oil
1.201	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-2-(3-fluoro,5-chloro)- pyridine	93-94
1.202	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-2-(3-chloro,5-CF <sub>3</sub> )- pyridine	wax
1.203	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-2-(5-CF <sub>3</sub> )-pyridine	oil
1.204	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-4-(5-chloro,6-ethyl)- pyrimidine	oil
1.205	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	-H	O	-CH <sub>2</sub> -5-(2-chloro, 4-CF <sub>3</sub> )-thiazole	oil
1.206	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -5-(2-chloro)- thiazole	oil
1.207	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-2-(3,5-dichloro)- pyridine	159-160

1.208	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-2-(3-fluoro,5-chloro)- pyridine	119-121
1.209	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-2-(3-chloro,5-CF <sub>3</sub> )- pyridine	147-148
1.210	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-2-(5-CF <sub>3</sub> )-pyridine	87-89
1.211	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-4-(5-chloro,6-ethyl)- pyrimidine	75-77
1.212	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -5-(2-chloro,4-CF <sub>3</sub> )- thiazole	94
1.213	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -5-(2-chloro)- thiazole	oil
1.214	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl	oil
1.215	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-CH <sub>3</sub>	O	-H	oil
1.216	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -2-chlorophenyl	oil
1.217	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -3-chlorophenyl	oil
1.218	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -3-fluorophenyl	oil
1.219	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-CH <sub>3</sub>	O	-2-(3-chloro,5-CF <sub>3</sub> )- pyridine	113-114
1.220	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-CH <sub>3</sub>	O	-2-(5-CF <sub>3</sub> )-pyridine	solid
1.221	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-CH <sub>3</sub>	O	-CH <sub>2</sub> -3-CH <sub>3</sub> -phenyl	oil
1.222	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -phenyl	103-105
1.223	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	4-OCH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl	oil
1.224	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -3-chlorophenyl	72-74
1.225	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -3,5-dimethoxy- phenyl	oil
1.226	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -4-CH <sub>3</sub> -phenyl	79-81

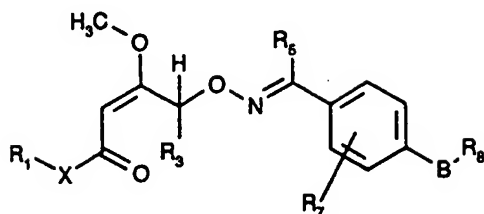
1.227	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -3-fluorophenyl	70-71
1.228	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -2-chlorophenyl	96-98
1.229	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-H	oil
1.230	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -2,4-dichloro- phenyl	
1.231	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -2,5-dichloro- phenyl	
1.232	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -4-fluorophenyl	
1.233	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	O	-CH <sub>2</sub> -2,5-dimethyl- phenyl	
1.234	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -phenyl	solid
1.235	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -3-chlorophenyl	89-91
1.236	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -3,5-dimethoxy- phenyl	oil
1.237	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -4-CH <sub>3</sub> -phenyl	oil
1.238	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -3-fluorophenyl	oil
1.239	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -2-chlorophenyl	81-82
1.240	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-H	oil
1.241	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -2,4-dichloro- phenyl	97-98
1.242	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -4,5-dichloro- phenyl	solid
1.243	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -4-fluorophenyl	oil
1.244	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -2,5-dimethyl- phenyl	oil



1.245	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -4-CH <sub>3</sub> O-phenyl	
1.246	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -2-CH <sub>3</sub> -phenyl	solid
1.247	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-F	O	-CH <sub>2</sub> -phenyl	
1.248	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-F	O	-CH <sub>2</sub> -3-chlorophenyl	
1.249	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-F	O	-CH <sub>2</sub> -3,5-dimethoxy phenyl	
1.250	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-F	O	-CH <sub>2</sub> -4-CH <sub>3</sub> -phenyl	
1.251	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-F	O	-CH <sub>2</sub> -3-fluorophenyl	
1.252	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-F	O	-CH <sub>2</sub> -2-chlorophenyl	
1.253	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-F	O	-H	
1.254	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-F	O	-CH <sub>2</sub> -2,4-dichlorophenyl	
1.255	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-F	O	-CH <sub>2</sub> -2,5-dichlorophenyl	
1.256	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -4-CF <sub>3</sub> -phenyl	oil
1.257	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-n-butyl	oil
1.258	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	O	-CH <sub>2</sub> -3-methylphenyl	oil

Table 2:

General formula Table 2



Comp. No.	R <sub>1</sub>	X	R <sub>3</sub>	R <sub>5</sub>	R <sub>7</sub>	B	R <sub>8</sub>	Phys. data m.p. °C
2.01	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	54-58
2.02	-H	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
2.03	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
2.04	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
2.05	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
2.06	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
2.07	-H	NH	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
2.08	-CH <sub>3</sub>	NH	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
2.09	-(CH <sub>3</sub> ) <sub>2</sub>	N	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
2.10	-H	O	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -phenyl	
2.11	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
2.12	-H	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
2.13	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
2.14	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
2.15	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3-CF <sub>3</sub> )-phenyl	
2.16	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-chlorophenyl	

2.17	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-chlorophenyl
2.18	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl
2.19	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl
2.20	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl
2.21	-(CH <sub>3</sub> ) <sub>2</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl
2.22	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-tert-butylphenyl
2.23	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-tert-butylphenyl
2.24	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-tert-butylphenyl
2.25	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-bromophenyl
2.26	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-bromophenyl
2.27	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-bromophenyl
2.28	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-bromophenyl
2.29	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-CH <sub>3</sub> -phenyl
2.30	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CH <sub>3</sub> -phenyl
2.31	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CH <sub>3</sub> -phenyl
2.32	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -β-naphthyl
2.33	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CF <sub>3</sub> -phenyl
2.34	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CF <sub>3</sub> -phenyl
2.35	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>2</sub> -phenyl
2.36	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-bromophenyl
2.37	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-bromophenyl
2.38	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-bromophenyl
2.39	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-CH <sub>3</sub> -phenyl
2.40	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-CH <sub>3</sub> -phenyl
2.41	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-OCHF <sub>2</sub> -phenyl

2.42	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-CN-phenyl
2.43	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-CN-phenyl
2.44	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-NO <sub>2</sub> -phenyl
2.45	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-NO <sub>2</sub> -phenyl
2.46	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -(3,5-bis-CF <sub>3</sub> )- phenyl
2.47	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-dichlorophenyl
2.48	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-dichlorophenyl
2.49	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-dichlorophenyl
2.50	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-dichlorophenyl
2.51	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-difluorophenyl
2.52	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,6-difluorophenyl
2.53	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-fluorophenyl
2.54	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl
2.55	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl
2.56	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl
2.57	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl
2.58	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-chlorophenyl
2.59	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,4-dichlorophenyl
2.60	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,4-dichlorophenyl
2.61	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-methoxyphenyl
2.62	-NH <sub>2</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-methoxyphenyl
2.63	-NHCH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-methoxyphenyl
2.64	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-methoxyphenyl
2.65	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-methoxyphenyl

2.66	-(CH <sub>2</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-methoxyphenyl
2.67	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-phenylphenyl
2.68	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,4,5-trimethoxyphenyl
2.69	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-phenoxyphenyl
2.70	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-phenoxyphenyl
2.71	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-phenoxyphenyl
2.72	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,4,6-trimethylphenyl
2.73	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2,5-dimethylphenyl
2.74	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,5-dimethoxyphenyl
2.75	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-ethoxyphenyl
2.76	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3,4-methylenedioxyphenyl
2.77	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-allyl
2.78	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-propargyl
2.79	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-butyl
2.80	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>3</sub> -phenyl
2.81	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>3</sub> -O-phenyl
2.82	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>2</sub> -CN
2.83	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-hexyl
2.84	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-pentyl
2.85	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-2-butyl
2.86	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -phenyl
2.87	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -4-chlorophenyl

2.88	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	S	-CH <sub>2</sub> -phenyl
2.89	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
2.90	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
2.91	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
2.92	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
2.93	-ethyl	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Cl	O	-CH <sub>2</sub> -phenyl
2.94	-ethyl	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -phenyl
2.95	-ethyl	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-chlorophenyl
2.96	-ethyl	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -4-fluorophenyl
2.97	-ethyl	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-CH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl
2.98	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-F	O	-CH <sub>2</sub> -phenyl
2.99	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-Br	O	-CH <sub>2</sub> -phenyl
2.100	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-CH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl
2.101	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-Cl	O	-CH <sub>2</sub> -phenyl
2.102	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-F	O	-CH <sub>2</sub> -phenyl
2.103	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-CH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl
2.104	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-CH <sub>3</sub>	O	-CH <sub>2</sub> -4-chlorophenyl
2.105	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-CH <sub>3</sub>	O	-CH <sub>2</sub> -4-fluorophenyl
2.106	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-F	O	-CH <sub>2</sub> -4-chlorophenyl
2.107	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-Cl	O	-CH <sub>2</sub> -4-chlorophenyl
2.108	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-F	O	-CH <sub>2</sub> -4-methoxyphenyl
2.109	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-Cl	O	-CH <sub>2</sub> -4-fluorophenyl
2.110	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-F	O	-CH <sub>2</sub> -phenyl
2.111	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-fluorophenyl
2.112	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -2-chlorophenyl

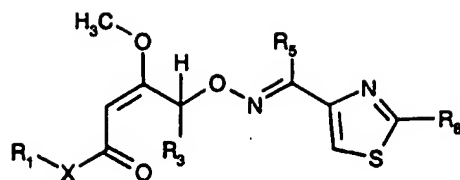
2.113	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH(CH <sub>3</sub> )-phenyl	
2.114	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-H	100-103
2.115	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	S	-CH <sub>2</sub> -phenyl	
2.116	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	NH	-CH <sub>2</sub> -2-chlorophenyl	
2.117	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	NH	-CH <sub>2</sub> -phenyl	
2.118	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	N(CH <sub>3</sub> )	-CH <sub>2</sub> -phenyl	
2.119	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-fluorophenyl	
2.120	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl	
2.121	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-CH <sub>2</sub> -4-chlorophenyl	
2.122	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-CH <sub>2</sub> -2,4-dichlorophenyl	
2.123	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-allyl	
2.124	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-propargyl	
2.125	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-H	
2.126	-CH <sub>3</sub>	O	-H	-H	-2-Cl	O	-CH <sub>2</sub> -phenyl	
2.127	-CH <sub>3</sub>	O	-H	-H	-2-Cl	O	-H	
2.128	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-Cl	O	-H	
2.129	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-Cl	O	-butyl	
2.130	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-Cl	O	-2,4-dichlorobenzyl	
2.131	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-Cl	O	-allyl	
2.132	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-Cl	O	-propargyl	
2.133	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-Cl	O	-3-trifluoromethylbenzyl	
2.134	-CH <sub>3</sub>	O	-H	-H	-2-Cl	O	-butyl	
2.135	-CH <sub>3</sub>	O	-H	-H	-2-Cl	O	-allyl	
2.136	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-(CH <sub>2</sub> ) <sub>8</sub> -CH <sub>3</sub>	oil
2.137	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl	oil

2.138	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-3OCH <sub>3</sub>	O	-CH <sub>2</sub> -phenyl	oil
2.139	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-H	111-113
2.140	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-CH <sub>2</sub> -3-fluorophenyl	oil
2.141	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-CH <sub>2</sub> -2-chlorophenyl	80-85
2.142	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-CH <sub>2</sub> -3,4-dichlorophenyl	oil
2.143	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3OCH <sub>3</sub>	O	-CH <sub>2</sub> -3-methylphenyl	oil
2.144	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl	oil
2.145	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -3-fluorophenyl	oil
2.146	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -2-chlorophenyl	oil
2.147	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3Cl	O	-CH <sub>2</sub> -3-fluorophenyl	oil
2.148	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3Cl	O	-CH <sub>2</sub> -2-chlorophenyl	82-83
2.149	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3Cl	O	-CH <sub>2</sub> -2,4-dichlorophenyl	71-83
2.150	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3Cl	O	-CH <sub>2</sub> -3-methylphenyl	oil
2.151	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3Cl	O	-H	106-107
2.152	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-3Cl	O	-CH <sub>2</sub> -phenyl	oil
2.153	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -3,4-dichlorophenyl	oil
2.154	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -3-methylphenyl	oil
2.155	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-H	-H	O	-CH <sub>2</sub> -2,4-dichlorophenyl	oil
2.156	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	O	-CH <sub>2</sub> -3-phenoxyphenyl	oil



Table 3:

General formula Table 3



Comp. No.	R <sub>1</sub>	X	R <sub>3</sub>	R <sub>5</sub>	R <sub>8</sub>	Phys. data m.p. °C
3.01	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-CH <sub>2</sub> -O-phenyl	oil
3.02	-H	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-CH <sub>2</sub> -O-phenyl	
3.03	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-CH <sub>2</sub> -O-phenyl	
3.04	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-CH <sub>2</sub> -O-phenyl	
3.05	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-CH <sub>2</sub> -O-phenyl	
3.06	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-methyl)-thiazole	wax
3.07	-H	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-methyl)-thiazole	
3.08	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-methyl)-thiazole	
3.09	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-methyl)-thiazole	
3.10	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-methyl)-thiazole	
3.11	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-ethyl)-thiazole	
3.12	-H	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-ethyl)-thiazole	
3.13	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-ethyl)-thiazole	
3.14	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-ethyl)-thiazole	
3.15	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-ethyl)-thiazole	
3.16	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-isopropyl)-thiazole	
3.17	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-isopropyl)-thiazole	

3.18	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-tert-butyl)-thiazole	
3.19	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-tert-butyl)-thiazole	
3.20	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-tert-butyl)-thiazole	
3.21	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-tert-butyl)-thiazole	
3.22	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-n-butyl)-thiazole	
3.23	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-n-butyl)-thiazole	
3.24	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-n-butyl)-thiazole	
3.25	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-sec-butyl)-thiazole	
3.26	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-sec-butyl)-thiazole	
3.27	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-sec-butyl)-thiazole	
3.28	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-sec-butyl)-thiazole	
3.29	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-n-propyl)-thiazole	
3.30	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-n-hexyl)-thiazole	
3.31	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-(2-n-hexyl)-thiazole	
3.32	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2,4-dichlorophenyl)]-thiazole	
3.33	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2,4-dichlorophenyl)]-thiazole	
3.34	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2,4-dichlorophenyl)]-thiazole	
3.35	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(3-trifluorophenyl)]-thiazole	oil
3.36	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(3-trifluorophenyl)]-thiazole	
3.37	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(3-trifluorophenyl)]-thiazole	
3.38	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(4-fluorophenyl)]-thiazole	
3.39	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(4-fluorophenyl)]-thiazole	oil
3.40	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(4-methylphenyl)]-thiazole	

3.41	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(4-methylphenyl)]-thiazole	
3.42	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[(2-phenyl)]-thiazole	
3.43	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-CH <sub>2</sub> -O-(4-chlorophenyl)	oil
3.44	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-chlorophenyl)]-thiazole	oil
3.45	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-fluorophenyl)]-thiazole	
3.46	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-methylphenyl)]-thiazole	
3.47	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-methoxyphenyl)]- thiazole	
3.48	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-methoxyphenyl)]- thiazole	
3.49	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-methoxyphenyl)]- thiazole	
3.50	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-methoxyphenyl)]- thiazole	
3.51	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-methoxyphenyl)]- thiazole	
3.52	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-chlorophenyl)]-thiazole	
3.53	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(2-chlorophenyl)]-thiazole	
3.54	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-methyl	
3.55	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-ethyl	
3.56	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-ethyl	
3.57	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-ethyl	
3.58	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-ethyl	
3.59	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-phenyl	oil
3.60	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-isopropyl	
3.61	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-isopropyl	

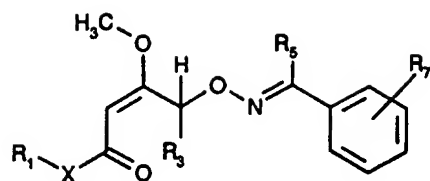
3.62	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-n-propyl	
3.63	-H	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-n-propyl	
3.64	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-n-butyl	
3.65	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-tert-butyl	
3.66	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-tert-butyl	
3.67	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-tert-butyl	
3.68	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-chlorophenyl	oil
3.69	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-chlorophenyl	
3.70	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2,4-dichlorophenyl	
3.71	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-2,4-dichlorophenyl	
3.72	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2,4-dichlorophenyl	
3.73	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2,6-dichlorophenyl	90-92
3.74	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-phenoxy	
3.75	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-chlorophenoxy	
3.76	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-chlorophenoxyphenyl	
3.77	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-chlorophenoxyphenyl	
3.78	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-trifluoromethylphenyl	
3.79	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-trifluoromethylphenyl	
3.80	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-methoxyphenyl	oil
3.81	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-methoxyphenyl	
3.82	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-chlorophenoxyethyl	
3.83	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2,4-dichlorophenoxyethyl	
3.84	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-phenoxyphenoxyethyl	
3.85	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[(4-chlorophenoxy)-phenoxy]- methyl	

3.86	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-anilino
3.87	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-chloroanilino
3.88	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-1-phenoxyethyl
3.89	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-1-(4-chlorophenoxy)-ethyl
3.90	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-phenoxyethyl
3.91	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-(4-chlorophenoxy)-ethyl
3.92	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-(2,4-dichlorophenoxy)-ethyl
3.93	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-1-(2,4-dichlorophenoxy)-ethyl
3.94	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-amino
3.95	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-pyridyl
3.96	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-trifluorophenoxyethyl
3.97	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-1-(4-chlorophenoxy)-ethyl
3.98	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-phenoxyethyl
3.99	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-(4-chlorophenoxy)-ethyl
3.100	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-2-(2,4-dichlorophenoxy)-ethyl
3.101	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-3-pyridyl
3.102	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-2-(2,4-dichlorophenoxy)-ethyl
3.103	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-4-[2-(2,4-dichlorophenyl)]-thiazole
3.104	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-CH <sub>2</sub> -O-phenyl
3.105	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-4-(2-methyl)-thiazole
3.106	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-4-(2-isopropyl)-thiazole
3.107	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-4-(2-tert-butyl)-thiazole
3.108	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-4-[2-(3-trifluorophenyl)]-thiazole
3.109	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-4-chlorophenyl

3.110	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-4-chlorophenoxy	
3.111	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-3-pyridyl	
3.112	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-[2-(4-chlorophenyl)]-thiazole	wax
3.113	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-4-phenoxyphenyl	oil
3.114	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-4-CF <sub>3</sub> -phenyl	oil
3.115	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-CH <sub>2</sub> -O-(4-chlorophenyl)	oil
3.116	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-4-(2-phenyl)-thiazole	105-106
3.117	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-2,4-dichlorophenyl	86-89

Table 4:

General formula Table 4



Comp. No.	R <sub>1</sub>	X	R <sub>3</sub>	R <sub>5</sub>	R <sub>7</sub>	Phys. data m.p. °C
4.01	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	-H	
4.02	-H	NH	-H	-CH <sub>3</sub>	-H	
4.03	-CH <sub>3</sub>	NH	-H	-CH <sub>3</sub>	-H	
4.04	-(CH <sub>3</sub> ) <sub>2</sub>	N	-H	-CH <sub>3</sub>	-H	
4.05	-H	O	-H	-CH <sub>3</sub>	-H	
4.06	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	oil
4.07	-H	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	
4.08	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	
4.09	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	
4.10	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	-H	
4.11	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	
4.12	-H	N	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	
4.13	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	
4.14	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	
4.15	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-Cl	
4.16	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3-CF <sub>3</sub>	oil
4.17	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	3-CF <sub>3</sub>	

4.18	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	
4.19	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	
4.20	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	
4.21	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CF <sub>3</sub>	
4.22	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-tert-butyl	amorphous
4.23	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-tert-butyl	
4.24	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	4-tert-butyl	
4.25	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3-Cl	
4.26	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3-Cl	
4.27	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	3-Cl	
4.28	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	3-Cl	
4.29	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2,6-dichloro	
4.30	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2,6-difluoro	
4.31	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	2,6-difluoro	
4.32	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub>	
4.33	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3-CH <sub>3</sub>	
4.34	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	3-CH <sub>3</sub>	
4.35	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3-methoxy	
4.36	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-methoxy	
4.37	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-methoxy	
4.38	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3,4-dimethoxy	
4.39	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-n-butyl	
4.40	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	4-n-propyl	
4.41	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-n-propyl	
4.42	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CN	

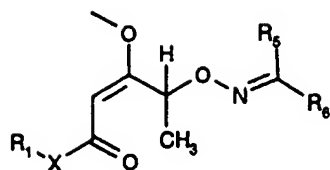


4.43	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3-difluoromethoxy	
4.44	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-difluoromethoxy	
4.45	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2,4-dichloro	
4.46	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	2,4-dichloro	
4.47	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2,3-dichloro	
4.48	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2,4-dichloro	
4.49	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	-CH <sub>3</sub>	2,4-dichloro	
4.50	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	-CH <sub>3</sub>	2,4-dichloro	
4.51	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CN	4-(4-trifluoromethylphenoxy)	resin
4.52	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CN	3-chloro-4-(2-chloro-4-trifluoromethylphenoxy)	resin
4.53	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(3-trifluoromethylphenoxy)	oil
4.54	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CN	4-(2-bromo-4-trifluoromethylphenoxy)	oil
4.55	-CH <sub>3</sub>	O	-H	-CH <sub>3</sub>	2,5-dichloro	
4.56	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2,5-dichloro	
4.57	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-chloro	
4.58	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-n-propyl	4-chloro	
4.59	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	2,4-dichloro	
4.60	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-phenoxy	
4.61	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-ethyl	4-(4-chlorophenoxy)	
4.62	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(4-chlorophenoxy)	
4.63	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(3,5-bis-trifluoromethylphenoxy)	oil
4.64	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(3,5-dichlorophenoxy)	oil
4.65	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(4-methylphenoxy)	oil
4.66	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(4-trifluoromethylphenoxy)	oil

4.67	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(2,4-dichlorophenoxy)	oil
4.68	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2-hydroxy	wax
4.69	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2-chloro,4-O-benzyloxy	oil
4.70	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	CH <sub>2</sub> -O-(4-chlorophenyl)	83-84
4.71	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2-O-benzyl	oil
4.72	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2-O-(3-chlorobenzyl)	oil
4.73	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2-O-(4-chlorobenzyl)	oil
4.74	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub> O,3-CH <sub>2</sub> -O-(4-chloro,3-CH <sub>3</sub> -phenyl)	oil
4.75	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-CH <sub>3</sub> O,3-CH <sub>2</sub> -O-(2,4-dichlorophenyl)	oil
4.76	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3-(CH(CH <sub>3</sub> )C(OCH <sub>3</sub> )=CHCOOCH <sub>3</sub> )	oil
4.77	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(imidazol-1-yl)	
4.78	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	2,4-dimethyl	
4.79	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3,4-methylenedioxy	94-96
4.80	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-morpholino	solid
4.81	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3,4-(1,4-dioxanyl)	
4.82	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3-nitro	
4.83	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-phenyl	solid
4.84	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3,4-difluoro	
4.85	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	3,5-bis-CF <sub>3</sub>	
4.86	-H	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(3-CF <sub>3</sub> -phenoxy)	solid
4.87	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-CH <sub>3</sub>	4-(1-pyrazolyl)	solid

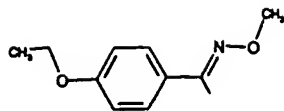
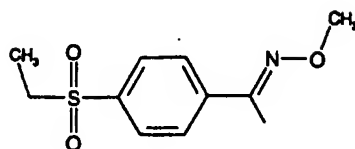
Table 5:

General formula Table 5

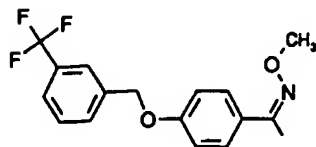
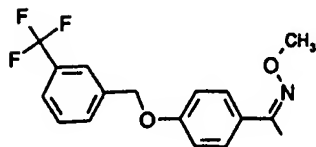


Comp. No.	R <sub>1</sub>	X	R <sub>5</sub>	R <sub>6</sub>	Phys. data m.p. °C
5.01	-CH <sub>3</sub>	O	-CH <sub>3</sub>		61-63
5.02	-H	NH	-CH <sub>3</sub>		
5.03	-CH <sub>3</sub>	NH	-CH <sub>3</sub>		
5.04	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>		
5.05	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.06	-CH <sub>3</sub>	NH	-CH <sub>3</sub>		
5.07	-H	O	-CH <sub>3</sub>		

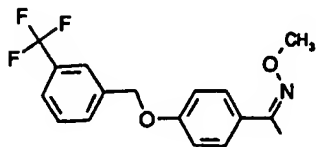
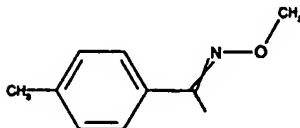
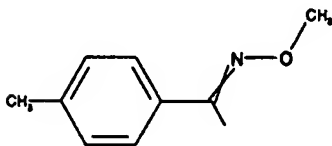
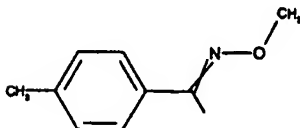
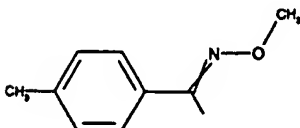
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5.08     $-(\text{CH}_3)_2$     N     $-\text{CH}_3$ 5.09     $-\text{CH}_3$     O     $-\text{CH}_3$ 

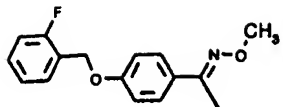
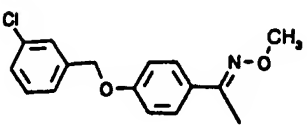
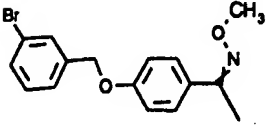
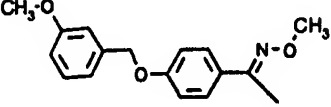
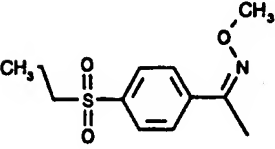
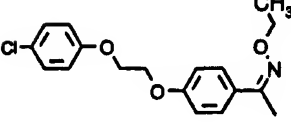
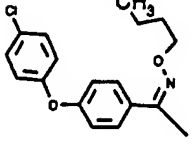
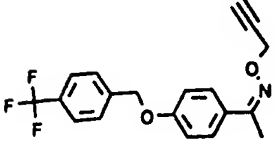
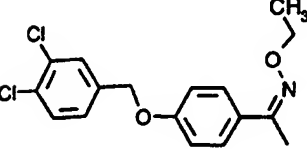
78-81

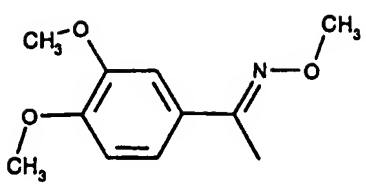
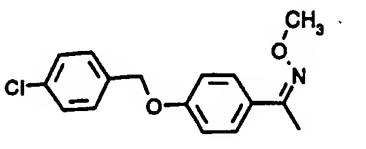
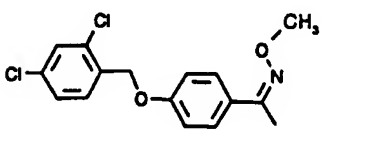
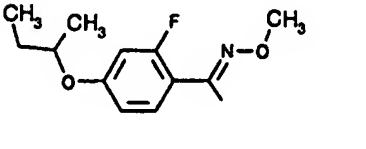
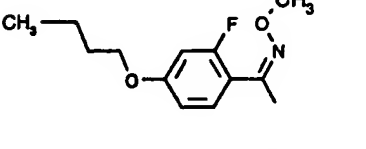
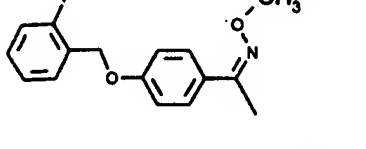
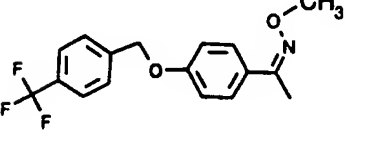
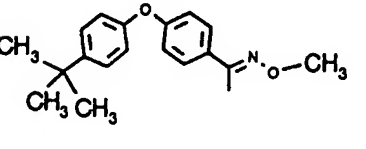
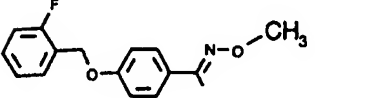
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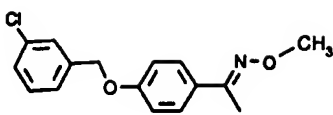
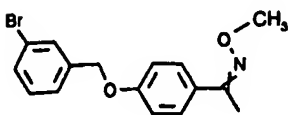
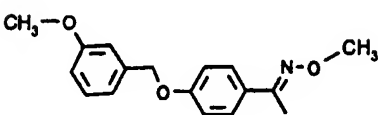
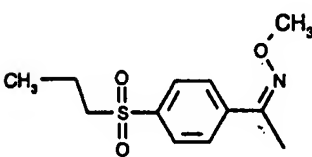
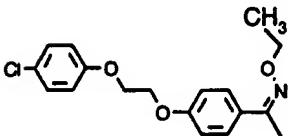
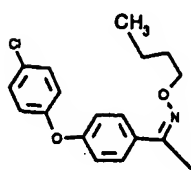
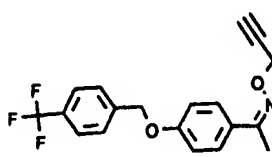
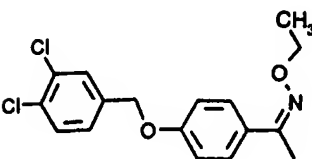
92-93

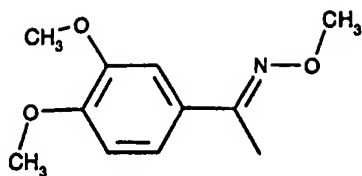
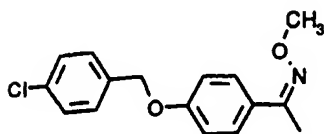
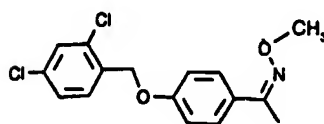
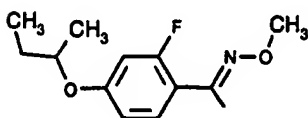
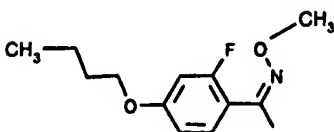
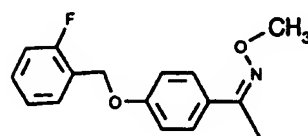
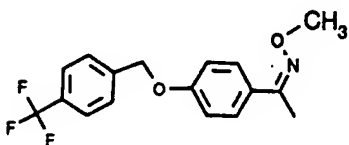
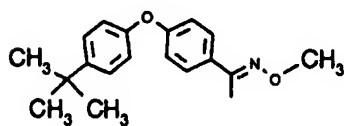
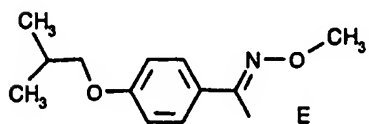
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5.17	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.18	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.19	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.20	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.21	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.22	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.23	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>	
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5.25	-CH <sub>3</sub>	O	-CH <sub>3</sub>	

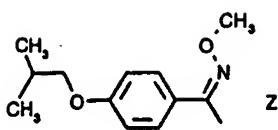
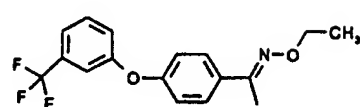
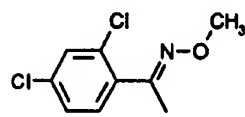
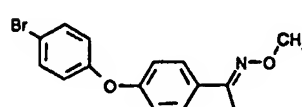
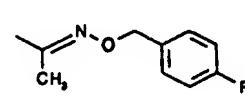
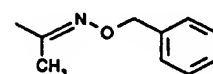
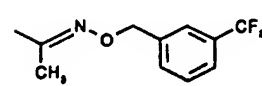
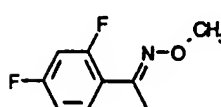
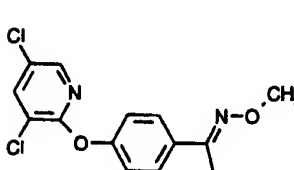
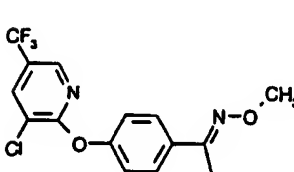
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5.31	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.32	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
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5.34	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	

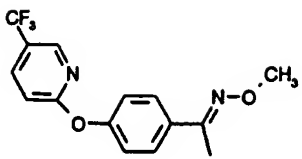
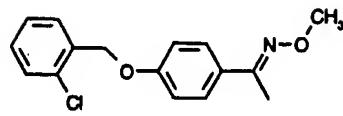
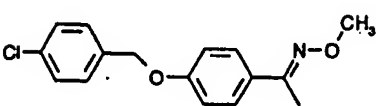
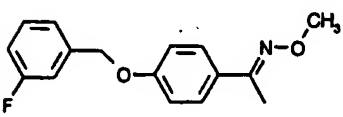
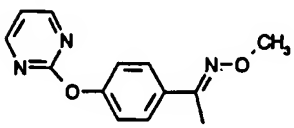
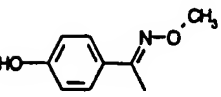
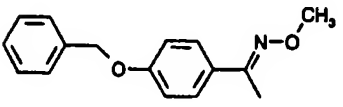
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5.39	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	
5.40	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	
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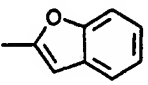
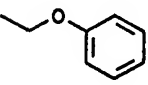
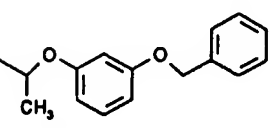
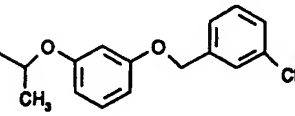
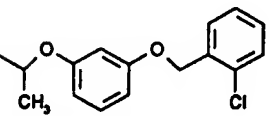
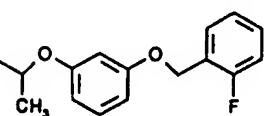
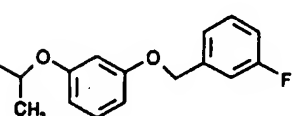
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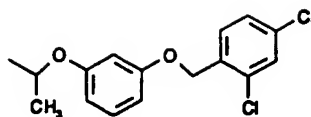
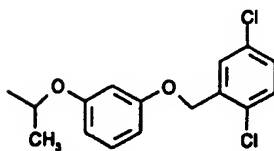
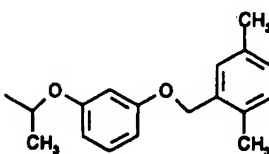
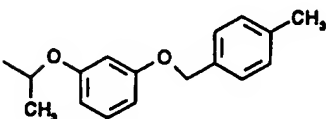
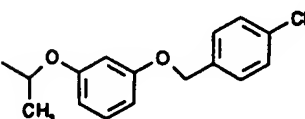
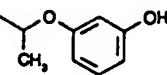
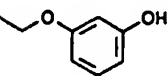
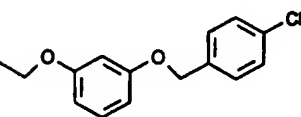
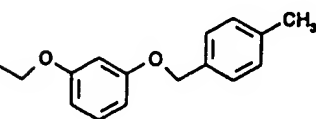
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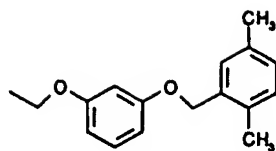
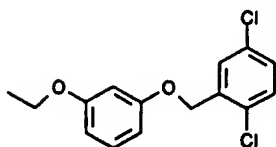
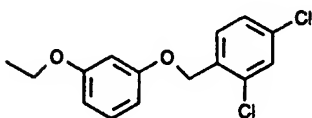
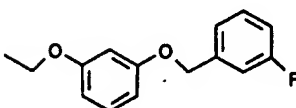
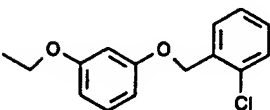
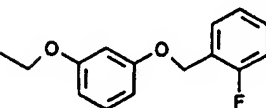
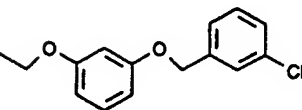
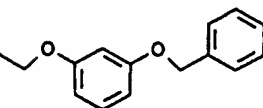


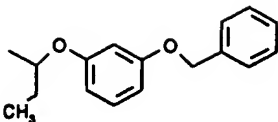
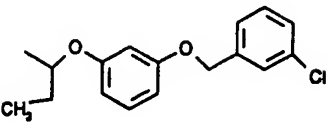
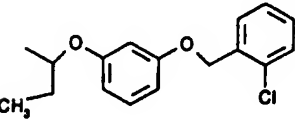
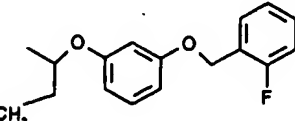
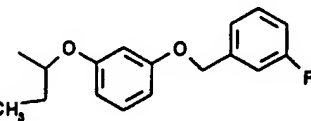
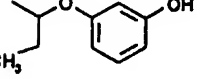
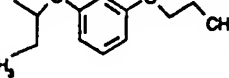
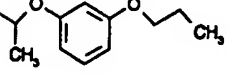
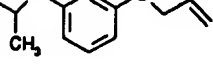
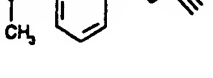
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5.55	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.56	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.57	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.58	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.59	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.60	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.61	-CH <sub>3</sub>	O	-CH <sub>3</sub>		96-103

5.62	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.63	-CH <sub>3</sub>	O	-CH <sub>3</sub>		81-84
5.64	-CH <sub>3</sub>	O	-CH <sub>3</sub>		119-122
5.65	-CH <sub>3</sub>	O	-CH <sub>3</sub>		91-94
5.66	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.67	-CH <sub>3</sub>	O	-CH <sub>3</sub>		wax
5.68	-CH <sub>3</sub>	O	-CH <sub>3</sub>		wax
5.69	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-naphthyl	oil
5.70	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(6-methyl)-naphthyl	solid
5.71	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(6-methoxy)-naphthyl	
5.72	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(6-hydroxy)-naphthyl	
5.73	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(6-benzyloxy)-naphthyl	
5.74	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(6-(2'-chloro)-benzyloxy)-naphthyl	

5.75	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(7-methyl)-naphthyl	
5.76	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(7-methoxy)-naphthyl	
5.77	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(7-benzyloxy)-naphthyl	
5.78	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(7-(2'-chloro)-benzyloxy)-naphthyl	
5.79	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(6-(4'-chloro)-benzyloxy)-naphthyl	
5.80	-CH <sub>3</sub>	O	-CH <sub>3</sub>	-2-(6-(3'-chloro)-benzyloxy)-naphthyl	
5.81	-CH <sub>3</sub>	O	-CH <sub>3</sub>		resin
5.82	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
5.83	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
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5.85	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
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5.87	-CH <sub>3</sub>	O	-CH <sub>3</sub>		

5.88 -CH<sub>3</sub> O -CH<sub>3</sub>5.89 -CH<sub>3</sub> O -CH<sub>3</sub>5.90 -CH<sub>3</sub> O -CH<sub>3</sub>5.91 -CH<sub>3</sub> O -CH<sub>3</sub>5.92 -CH<sub>3</sub> O -CH<sub>3</sub>5.93 -CH<sub>3</sub> O -CH<sub>3</sub>5.94 -CH<sub>3</sub> O -CH<sub>3</sub>5.95 -CH<sub>3</sub> O -CH<sub>3</sub>5.96 -CH<sub>3</sub> O -CH<sub>3</sub>

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5.106	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.107	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.108	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.109	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.110	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.111	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.112	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
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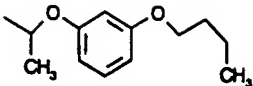
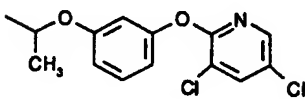
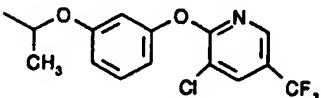
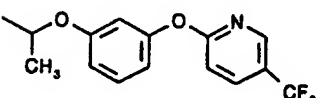
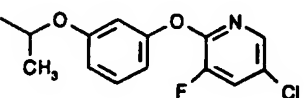
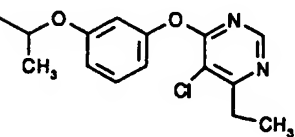
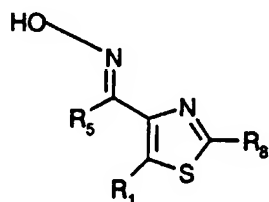
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5.116	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.117	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.118	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.119	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
5.120	-CH <sub>3</sub>	O	-CH <sub>3</sub>	

Table 6: Intermediates

Compound	Phys. data
4-bromo-3-methoxypent-2-enecarboxylic acid methyl ester	
4-bromo-3-methoxypent-2-enecarboxylic acid ethyl ester	
4-chloro-3-methoxypent-2-enecarboxylic acid ethyl ester	
4-chloro-3-methoxypent-2-enecarboxylic acid methyl ester	b.p. 124-125/55mbar
4-chloro-3-methoxypent-2-enecarboxylic acid butyl ester	
4-bromo-3-methoxypent-2-enecarboxylic acid N,N-dimethylamide	
4-chloro-3-methoxypent-2-enecarboxylic acid N,N-dimethylamide	

Table 7: Oximes

General formula Table 7



Comp. No.	R <sub>1</sub>	R <sub>5</sub>	R <sub>8</sub>	Phys. data m.p. °C
7.01	H	methyl	-4-(2-methyl)-thiazole	190-192
7.02	H	methyl	-4-(2-ethyl)-thiazole	
7.03	H	methyl	-4-(2-isopropyl)-thiazole	140-141
7.04	H	methyl	-4-(2-n-butyl)-thiazole	
7.05	H	methyl	-4-(2-tert-butyl)-thiazole	
7.06	H	methyl	-4-(2-sec-butyl)-thiazole	
7.07	H	methyl	-4-(2-n-propyl)-thiazole	
7.08	H	methyl	-4-(2-n-hexyl)-thiazole	

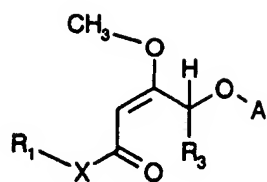


7.09	H	methyl	-4-[2-(2,4-dichlorophenyl)]-thiazole	
7.10	H	methyl	-4-[2-(3-trifluoromethyl-phenyl)]-thiazole	
7.11	H	methyl	-4-[2-(4-fluorophenyl)]-thiazole	
7.12	H	methyl	-4-[2-(4-methylphenyl)]-thiazole	
7.13	H	methyl	-4-[2-(2-chlorophenyl)]-thiazole	
7.14	H	methyl	-4-[2-(2-fluorophenyl)]-thiazole	
7.15	H	methyl	-4-[2-(2-methylphenyl)]-thiazole	
7.16	H	methyl	-4-[2-(2-methoxyphenyl)]-thiazole	
7.17	H	methyl	-methyl	93-95
7.18	H	methyl	-ethyl	
7.19	H	methyl	-isopropyl	oil
7.20	H	methyl	-n-propyl	
7.21	H	methyl	-tert-butyl	
7.22	H	methyl	-phenyl	167-170
7.23	H	methyl	-4-chlorophenyl	140-142
7.24	H	methyl	-2,4-dichlorophenyl	158-162
7.25	H	methyl	-2,6-dichlorophenyl	215-218
7.26	H	methyl	-phenoxy	
7.27	H	methyl	-4-chlorophenoxy	
7.28	H	methyl	-4-phenoxyphenyl	163-165
7.29	H	methyl	-4-chlorophenoxyphenyl	
7.30	H	methyl	-3-trifluorophenyl	130-133
7.31	H	methyl	-4-trifluorophenyl	173-175
7.32	H	methyl	-4-methoxyphenyl	170-173
7.33	H	methyl	-4-chlorophenoxyethyl	130-132
7.34	H	methyl	-2,4-dichlorophenoxyethyl	
7.35	H	methyl	-4-phenoxyphenoxyethyl	
7.36	H	methyl	-4-chlorophenoxyphenoxyethyl	
7.37	H	methyl	-anilino	193-196
7.38	H	methyl	-4-chloroaniline	
7.39	H	methyl	-2,4-dichloroaniline	
7.40	H	methyl	-1-phenoxyethyl	
7.41	H	methyl	-1-(4-chlorophenoxy)-ethyl	

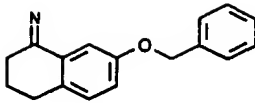
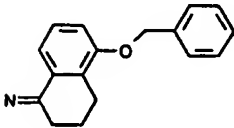
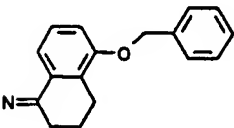
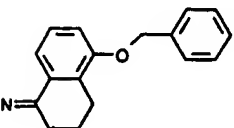
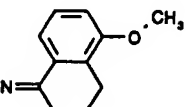
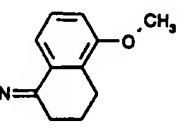
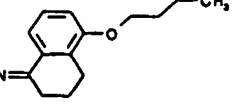
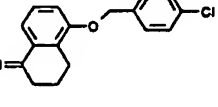
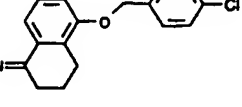
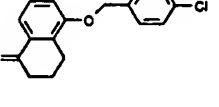
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7.43	H	methyl	-2-(4-chlorophenoxy)-ethyl	
7.44	H	methyl	-2-(2,4-dichlorophenoxy)-ethyl	
7.45	H	methyl	-1-(2,4-dichlorophenoxy)-ethyl	
7.46	H	methyl	-amino	158-160
7.47	H	methyl	-3-pyridyl	148-152
7.48	H	methyl	-4-(2-phenyl)-thiazole	221-222
7.49	H	methyl	-phoxymethyl	154-156

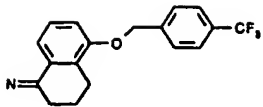
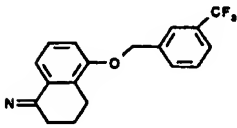
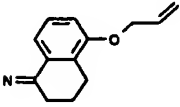
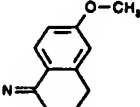
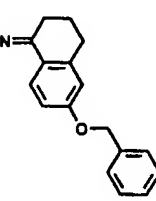
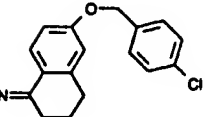
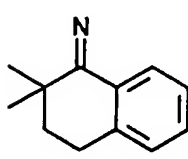
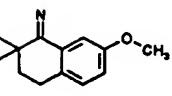
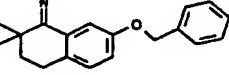
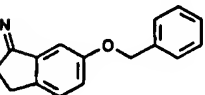
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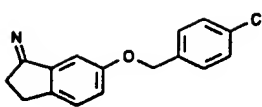
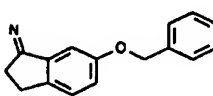
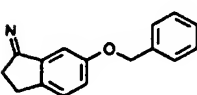
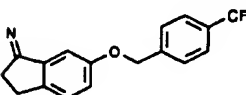
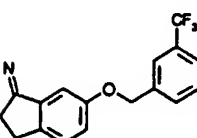
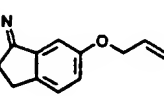
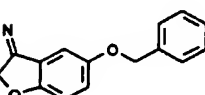
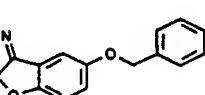
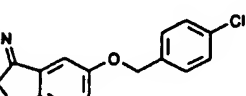
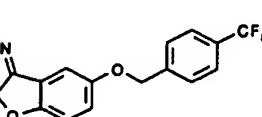
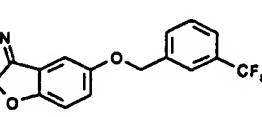
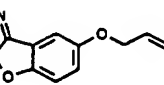
General formula Table 8

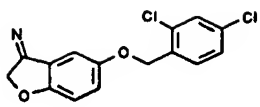

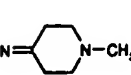
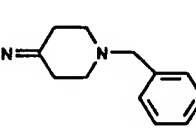
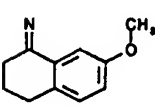
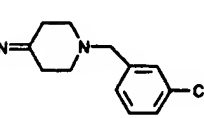
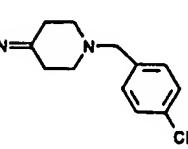
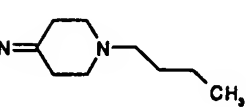
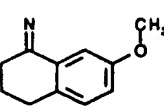
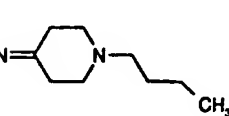
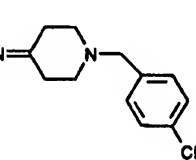


Comp. No.	R <sub>1</sub>	X	R <sub>3</sub>	A	Phys. data M.p. °C
8.01	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.02	-H	NH	-CH <sub>3</sub>		
8.03	-CH <sub>3</sub>	NH	-CH <sub>3</sub>		
8.04	-(CH <sub>3</sub> ) <sub>2</sub>	N	-CH <sub>3</sub>		
8.05	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.06	-CH <sub>3</sub>	NH	-CH <sub>3</sub>		
8.07	-H	O	-CH <sub>3</sub>		

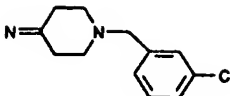
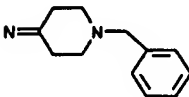
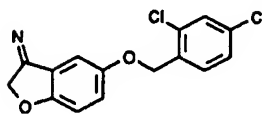
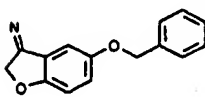
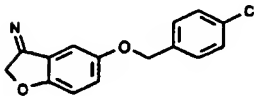
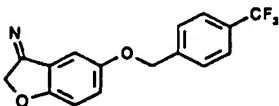
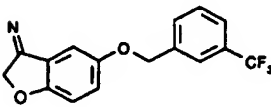
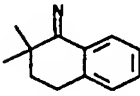
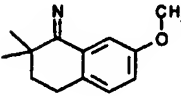
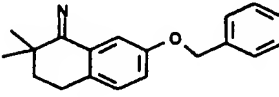
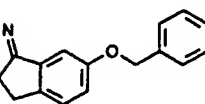
8.08	$-(\text{CH}_3)_2$	N	$-\text{CH}_3$	
8.09	$-\text{CH}_3$	O	$-\text{CH}_3$	
8.10	-H	O	$-\text{CH}_3$	
8.11	$-\text{CH}_3$	NH	$-\text{CH}_3$	
8.12	$-\text{CH}_3$	O	$-\text{CH}_3$	
8.13	$-\text{CH}_3$	NH	$-\text{CH}_3$	
8.14	$-\text{CH}_3$	O	$-\text{CH}_3$	
8.15	-H	O	$-\text{CH}_3$	
8.16	$-\text{CH}_3$	NH	$-\text{CH}_3$	
8.17	$-\text{CH}_3$	O	$-\text{CH}_3$	

8.18	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.19	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.20	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.21	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.22	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.23	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.24	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.25	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.26	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.27	-CH <sub>3</sub>	O	-CH <sub>3</sub>	

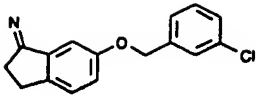
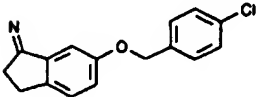
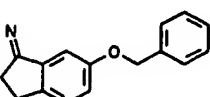
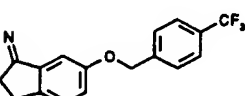
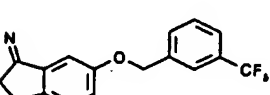
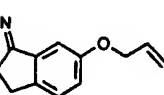
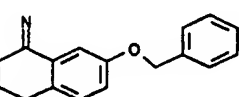
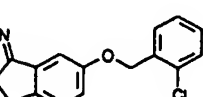
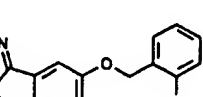
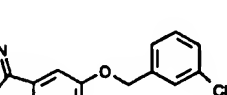
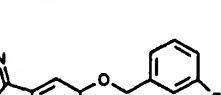
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8.30	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	
8.31	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.32	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.33	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.34	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	
8.35	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.36	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.37	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.38	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.39	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	

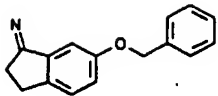
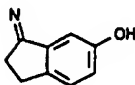
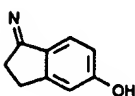
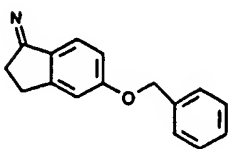
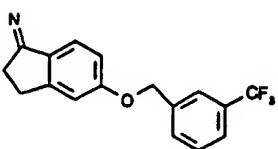
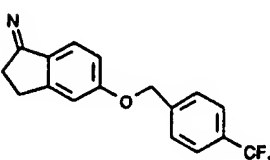
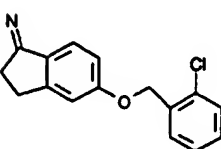
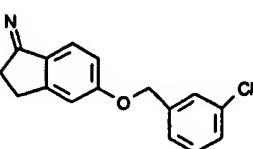
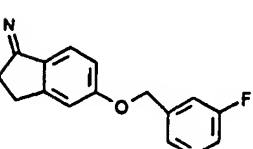
8.40	-CH <sub>3</sub>	NH	-CH <sub>3</sub>	
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8.42	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.43	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.44	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.45	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.46	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.47	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.48	-CH <sub>3</sub>	O	-H	
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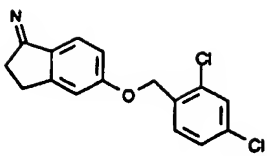
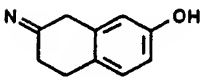
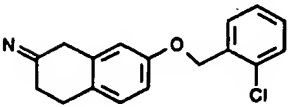
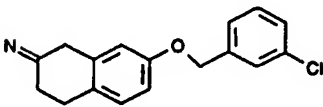
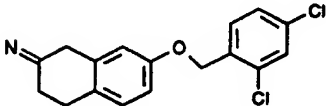
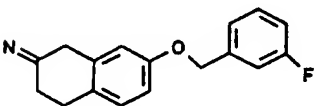
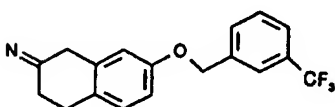
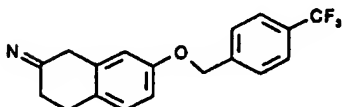
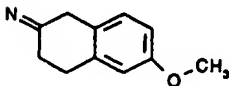
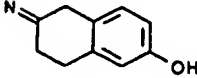
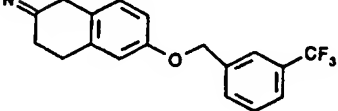
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8.51	-CH <sub>3</sub>	O	-H	
8.52	-CH <sub>3</sub>	O	-H	
8.53	-CH <sub>3</sub>	O	-H	
8.54	-CH <sub>3</sub>	O	-H	
8.55	-CH <sub>3</sub>	O	-H	
8.56	-CH <sub>3</sub>	O	-H	
8.57	-CH <sub>3</sub>	O	-H	
8.58	-CH <sub>3</sub>	O	-H	
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8.61	-CH <sub>3</sub>	O	-H	

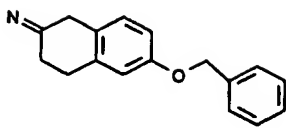
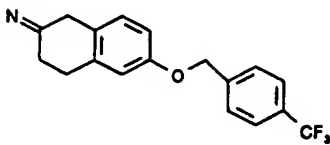
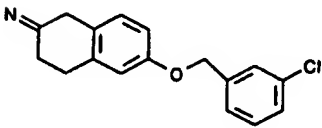
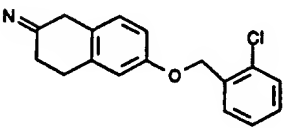
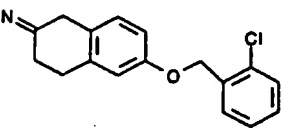
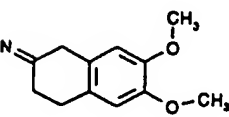
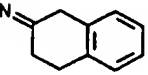

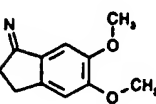


8.62	-CH <sub>3</sub>	O	-H	
8.63	-CH <sub>3</sub>	O	-H	
8.64	-CH <sub>3</sub>	O	-H	
8.65	-CH <sub>3</sub>	O	-H	
8.66	-CH <sub>3</sub>	O	-H	
8.67	-CH <sub>3</sub>	O	-H	
8.68	-CH <sub>3</sub>	O	-H	
8.69	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.70	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.71	-CH <sub>3</sub>	O	-CH <sub>3</sub>	
8.72	-CH <sub>3</sub>	O	-CH <sub>3</sub>	

8.73	-CH <sub>3</sub>	O	-Et		
8.74	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.75	-CH <sub>3</sub>	O	-CH <sub>3</sub>		141-143
8.76	-CH <sub>3</sub>	O	-CH <sub>3</sub>		106-108
8.77	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.78	-CH <sub>3</sub>	O	-CH <sub>3</sub>		96-98
8.79	-CH <sub>3</sub>	O	-CH <sub>3</sub>		89-92
8.80	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.81	-CH <sub>3</sub>	O	-CH <sub>3</sub>		111-113

8.82	-CH <sub>3</sub>	O	-CH <sub>3</sub>		87-90
8.83	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.84	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.85	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.86	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.87	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.88	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.89	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.90	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.91	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.92	-CH <sub>3</sub>	O	-CH <sub>3</sub>		

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8.93	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.94	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.95	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.96	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.97	-CH <sub>3</sub>	O	-Et		
8.98	-CH <sub>3</sub>	O	-CH <sub>3</sub>		81-82
8.99	-CH <sub>3</sub>	O	-CH <sub>3</sub>		oil
8.100	-CH <sub>3</sub>	O	-CH <sub>3</sub>		
8.101	-CH <sub>3</sub>	O	-CH <sub>3</sub>		114-116

Formulation Examples for compounds of formula I (throughout, percentages are by weight)F-1: Wettable powders

	a)	b)	c)
a compound of Tables 1 to 5 and 8	25 %	50 %	75 %
sodium lignosulfonate	5 %	5 %	-
sodium lauryl sulfate	3 %	-	5 %
sodium diisobutyl naphthalenesulfonate	-	6 %	10 %
octylphenol polyethylene glycol ether (7-8 mol of ethylene oxide)	-	2 %	-
highly dispersed silicic acid	5 %	10 %	10 %
kaolin	62 %	27 %	-

The active ingredient is thoroughly mixed with the adjuvants and the mixture is ground thoroughly in a suitable mill, affording wettable powders which can be diluted with water to give suspensions of any desired concentration.

F-2: Emulsifiable concentrate

a compound of Tables 1 to 5 and 8	10 %
octylphenol polyethylene glycol ether (4-5 mol of ethylene oxide)	3 %
calcium dodecylbenzenesulfonate	3 %
castor oil polyglycol ether (35 mol of ethylene oxide)	4 %
cyclohexanone	30 %
xylene mixture	50 %

Emulsions of any desired concentration can be obtained from this concentrate by dilution with water.

**F-3: Dusts**

	a)	b)
a compound of Tables 1 to 5 and 8	5 %	8 %
talcum	95 %	-
kaolin	-	92 %

Ready-for-use dusts are obtained by mixing the active ingredient with the carrier and grinding the mixture in a suitable mill.

**F-4: Extruder granules**

a compound of Tables 1 to 5 and 8	10 %
sodium lignosulfonate	2 %
carboxymethylcellulose	1 %
kaolin	87 %

The active ingredient is mixed and ground with the adjuvants, and the mixture is moistened with water. The mixture is extruded and then dried in a stream of air.

**F-5: Coated granules**

a compound of Tables 1 to 5 and 8	3 %
polyethylene glycol (mol. wt. 200)	3 %
kaolin	94 %

The finely ground active ingredient is uniformly applied, in a mixer, to the kaolin moistened with polyethylene glycol. Non-dusty coated granules are obtained in this manner.

**F-6: Suspension concentrate**

a compound of Tables 1 to 5 and 8	40 %
ethylene glycol	10 %
nonylphenol polyethylene glycol ether (15 mol of ethylene oxide)	6 %
sodium lignosulfonate	10 %
carboxymethylcellulose	1 %
37 % aqueous formaldehyde solution	0.2 %

silicone oil in the form of a 75 %	
aqueous emulsion	0.8 %
water	32 %

The finely ground active ingredient is intimately mixed with the adjuvants, giving a suspension concentrate from which suspensions of any desired dilution can be obtained by dilution with water.

### Biological Examples

#### A-1: Action against Puccinia graminis on wheat

##### a) Residual-protective action

6 days after sowing, wheat plants are sprayed to drip point with an aqueous spray mixture (0.02 % active ingredient) prepared from a wettable powder formulation of the test compound and infected 24 hours later with a uredospore suspension of the fungus. After an incubation period of 48 hours (conditions: 95 to 100 % relative humidity at 20 °C), the plants are placed in a greenhouse at 22 °C. The fungal infestation is evaluated 12 days after infection.

##### b) Systemic action

5 days after sowing, wheat plants are watered with an aqueous spray mixture (0.006 % active ingredient, based on the volume of the soil) prepared from a wettable powder formulation of the test compound. Care is taken that the spray mixture does not come into contact with the parts of the plants above the soil. The plants are infected 48 hours later with a uredospore suspension of the fungus. After an incubation period of 48 hours (conditions: 95 to 100 % relative humidity at 20 °C), the plants are placed in a greenhouse at 22°C. The fungal infestation is evaluated 12 days after infection.

Compounds of Tables 1 to 5 and 8 exhibit a good action. The infestation is generally suppressed to 10 % or less by, *inter alia*, the compounds 1.01, 1.03, 1.05, 1.30, 1.61, 1.73, 1.77, 1.114, 1.163, 1.170, 1.174, 1.183, 1.201, 1.208, 1.228, 1.235, 1.241, 2.01, 2.114, 2.148, 2.151, 3.01, 3.35, 3.73, 3.117, 4.04, 4.63, 4.70, 4.79, 5.01, 5.11, 5.61, 5.69, 8.75, 8.78, 8.81 and 8.98.

Example A-2: Action against *Phytophthora infestans* on tomatoesa) Residual-protective action

After a cultivation period of three weeks, tomato plants are sprayed to drip point with an aqueous spray mixture (0.02 % active ingredient) prepared from a wettable powder formulation of the test compound and infected 24 hours later with a sporangia suspension of the fungus. The fungal infestation is evaluated 5 days after infection, during which period 90 to 100 % relative humidity and a temperature of 20 °C are maintained.

b) Systemic action

After a cultivation period of three weeks, tomato plants are watered with an aqueous spray mixture (0.006 % active ingredient, based on the volume of the soil) prepared from a wettable powder formulation of the test compound. Care is taken that the spray mixture does not come into contact with the parts of the plants above the soil. The plants are infected 48 hours later with a sporangia suspension of the fungus. The fungal infestation is evaluated 5 days after infection, during which period 90 to 100 % relative humidity and a temperature of 20°C are maintained.

Compounds of Tables 1 to 5 and 8, e.g. *inter alia* 1.01, 1.03, 1.05, 1.30, 1.61, 1.73, 1.77, 1.114, 1.163, 1.170, 1.174, 1.183, 1.201, 1.208, 1.228, 1.235, 1.241, 2.01, 2.114, 2.148, 2.151, 3.01, 3.35, 3.73, 3.117, 4.04, 4.63, 4.70, 4.79, 5.01, 5.11, 5.61, 5.69, 8.75, 8.78, 8.81 and 8.98, exhibit a good action.

Example A-3: Residual-protective action against *Cercospora arachidicola* on groundnuts

Groundnut plants 10 to 15 cm in height are sprayed to drip point with an aqueous spray mixture (0.02 % active ingredient) prepared from a wettable powder formulation of the test compound and infected 48 hours later with a conidia suspension of the fungus. The plants are incubated for 72 hours at 21 °C and high humidity and then placed in a greenhouse until the typical leaf specks appear. The action of the active ingredient is evaluated 12 days after infection and is based on the number and size of the leaf specks.

Compounds of Tables 1 to 5 and 8, e.g. *inter alia* 1.01, 1.03, 1.05, 1.30, 1.61, 1.73, 1.77, 1.114, 1.163, 1.170, 1.174, 1.183, 1.201, 1.208, 1.228, 1.235, 1.241, 2.01, 2.114, 2.148, 2.151, 3.01, 3.35, 3.73, 3.117, 4.04, 4.63, 4.70, 4.79, 5.01, 5.11, 5.61, 5.69, 8.75, 8.78, 8.81 and 8.98, exhibit a good action.



Example A-4: Action against Plasmopara viticola on vines

Vine seedlings at the 4- to 5-leaf stage are sprayed to drip point with an aqueous spray mixture (0.02 % active ingredient) prepared from a wettable powder formulation of the test compound and infected 24 hours later with a sporangia suspension of the fungus. The fungal infestation is evaluated 6 days after infection, during which period 95 to 100 % relative humidity and a temperature of 20 °C are maintained.

Compounds of Tables 1 to 5 and 8 exhibit a good action.

Example A-5: Action against Colletotrichum lagenarium on cucumbers

After a cultivation period of 2 weeks, cucumber plants are sprayed with a spray mixture (0.002 % concentration) prepared from a wettable powder formulation of the test compound. Two days later, the plants are infected with a spore suspension ( $1.5 \times 10^5$  spores/ml) of the fungus and incubated for 36 hours at 23 °C and high humidity. Incubation is then continued at normal humidity and about 22 °C. The fungal infestation that has occurred is evaluated 8 days after infection.

Compounds of Tables 1 to 5 and 8 exhibit a good action.

Example A-6: Residual-protective action against Venturia inaequalis on apples

Apple cuttings with 10 to 20 cm long fresh shoots are sprayed to drip point with an aqueous spray mixture (0.02 % active ingredient) prepared from a wettable powder formulation of the test compound and infected 24 hours later with a conidia suspension of the fungus. The plants are incubated for 5 days at 90 to 100 % relative humidity and placed in a greenhouse for a further 10 days at 20 to 24 °C. The fungal infestation is evaluated 12 days after infection.

Compounds of Tables 1 to 5 and 8, e.g. *inter alia* 1.01, 1.03, 1.05, 1.30, 1.61, 1.73, 1.77, 1.114, 1.163, 1.170, 1.174, 1.183, 1.201, 1.208, 1.228, 1.235, 1.241, 2.01, 2.114, 2.148, 2.151, 3.01, 3.35, 3.73, 3.117, 4.04, 4.63, 4.70, 4.79, 5.01, 5.11, 5.61, 5.69, 8.75, 8.78, 8.81 and 8.98, exhibit a good action.

Example A-7: Action against Erysiphe graminis on barleya) Residual-protective action

Barley plants about 8 cm in height are sprayed to drip point with an aqueous spray mixture (0.02 % active ingredient) prepared from a wettable powder formulation of the test

compound and dusted 3 to 4 hours later with conidia of the fungus. The infected plants are placed in a greenhouse at 22 °C. The fungal infestation is evaluated 12 days after infection. Compounds of Tables 1 to 5 and 8 exhibit a good action.

b) Systemic action

Barley plants about 8 cm in height are watered with an aqueous spray mixture (0.002 % active ingredient, based on the volume of the soil) prepared from a wettable powder formulation of the test compound. Care is taken that the spray mixture does not come into contact with the parts of the plants above the soil. The plants are dusted 48 hours later with conidia of the fungus. The infected plants are placed in a greenhouse at 22 °C. The fungal infestation is evaluated 12 days after infection.

Compounds of Tables 1 to 5 and 8, e.g. *inter alia* 1.01, 1.03, 1.05, 1.30, 1.61, 1.73, 1.77, 1.114, 1.163, 1.170, 1.174, 1.183, 1.201, 1.208, 1.228, 1.235, 1.241, 2.01, 2.114, 2.148, 2.151, 3.01, 3.35, 3.73, 3.117, 4.04, 4.63, 4.70, 4.79, 5.01, 5.11, 5.61, 5.69, 8.75, 8.78, 8.81 and 8.98, exhibit a good action. The infestation is suppressed to from 10 to 0 %.

Example A-8: Action against *Podosphaera leucotricha* on apple shoots

Apple cuttings with approximately 15 cm long fresh shoots are sprayed with a spray mixture (0.06 % active ingredient). The treated plants are infected 24 hours later with a conidia suspension of the fungus and are placed in a controlled environment chamber at 70 % relative humidity and 20°C. The fungal infestation is evaluated 12 days after infection. Compounds of Tables 1 to 5 and 8 exhibit a good action.

Example A-9: Action against *Pythium debaryanum* on sugar beet (*Beta vulgaris*)

a) Action after soil application

The fungus is cultured on sterile oat grains and added to a soil/sand mixture. The infected soil is used to fill flower pots and sown with sugar beet seeds. Immediately after sowing, a wettable powder formulation of the test compounds in the form of an aqueous suspension is poured over the soil (20 ppm of active ingredient based on the volume of the soil). The pots are then placed in a greenhouse for 2 to 3 weeks at 20-24 °C. The soil is constantly kept uniformly moist by lightly spraying with water. In evaluating the test, the emergence of the sugar beet plants and also the proportion of healthy and diseased plants are determined.

b) Action after application by dressing

The fungus is cultured on sterile oat grains and added to a soil/sand mixture. The infected

soil is used to fill flower pots and sown with sugar beet seeds that have been dressed with the test compounds formulated as a dressing powder (1000 ppm of active ingredient based on the weight of the seeds). The sown pots are placed in a greenhouse for 2-3 weeks at 20-24°C, the soil being kept uniformly moist by lightly spraying with water. In evaluating the test, the emergence of the sugar beet plants and the proportion of healthy and diseased plants are determined.

After treatment with compounds of formula 1, over 80 % of the plants emerge and have a healthy appearance. In the control pots, only isolated emergence of plants, which have a sickly appearance, is observed.

Example A-10: Action against *Pyricularia oryzae* on rice plants

a) Residual-protective action

After a cultivation period of 2 weeks, rice plants are sprayed to drip point with an aqueous spray mixture (0.02 % active ingredient) and infected 48 hours later with a conidia suspension of the fungus. Evaluation of fungal infestation is made 5 days after infection, during which time 95 to 100 % relative humidity and a temperature of 22 °C are maintained.

b) Systemic action

2-week-old rice plants are watered with an aqueous spray mixture (0.006 % active ingredient, based on the volume of the soil). Care is taken that the spray mixture does not come into contact with the parts of the plants above the soil. The pots are then filled with water so that the lowermost parts of the stalks of the rice plants stand in water. After 96 hours, the plants are infected with a conidia suspension of the fungus and are kept for 5 days at 95 to 100 % relative humidity and a temperature of 24 °C.

Compounds of formula 1 largely prevent the outbreak of the disease on the infected plants.

Example A-11: Action against *Botrytis cinerea* on apple fruit

Residual-protective action

Artificially damaged apples are treated by applying drops of a spray mixture (0.02 % active ingredient) to the damage sites. The treated fruits are then inoculated with a spore suspension of the fungus and incubated for one week at high humidity and about 20 °C. The fungicidal action of the test compound is derived from the number of damage sites that have begun to rot.

Compounds of formula 1 of Tables 1 to 5 and 8, e.g. *inter alia* 1.01, 1.03, 1.05, 1.30, 1.61, 1.73, 1.77, 1.114, 1.163, 1.170, 1.174, 1.183, 1.201, 1.208, 1.228, 1.235, 1.241, 2.01, 2.114, 2.148, 2.151, 3.01, 3.35, 3.73, 3.117, 4.04, 4.63, 4.70, 4.79, 5.01, 5.11, 5.61, 5.69, 8.75, 8.78, 8.81 and 8.98, are able to prevent the spread of the rot in some cases completely.

Example A-12: Action against *Helminthosporium gramineum*

Wheat grains are contaminated with a spore suspension of the fungus and left to dry. The contaminated grains are dressed with a suspension of the test compound (600 ppm of active ingredient based on the weight of the seeds). After two days, the grains are set out on suitable agar dishes and, four days later, the development of the fungus colonies around the grains is assessed. The number and size of the fungus colonies are used to evaluate the test compound.

Compounds of formula 1 exhibit in some cases a very good action, i.e. inhibition of the fungus colonies.

Example A-13: Action against *Fusarium nivale* on rye

Rye of the Tetrahell variety naturally infected with *Fusarium nivale* is dressed in a roller mixer with the fungicide to be tested, the following concentrations being used: 20 or 6 ppm a.i. (based on the weight of the seed). The infected and treated rye is sown in the open in October in plots of 3 m length and 6 seed rows using a sowing machine. 3 replicates are made for each concentration. Until evaluation of the infestation, the test crop is cultivated under normal field conditions (preferably in a region having unbroken snow cover during the winter months).

In order to evaluate the phytotoxicity, the emergence of the plants is assessed in the autumn and the crop density/number of plants per unit area is assessed in the spring. In order to determine the activity of the compounds, in spring, immediately after the snow has melted, the percentage of plants infested with *Fusarium* is calculated. The number of infested plants is, in the present case, less than 5 %. The emerged plants have a healthy appearance.

Example A-14: Action against *Septoria nodorum* on wheat

Wheat plants are sprayed at the 3-leaf stage with a spray mixture (60 ppm a.i.) prepared from a wettable powder formulation of the test compounds. 24 hours later, the treated

plants are infected with a conidia suspension of the fungus. The plants are then incubated for 2 days at 90-100 % relative humidity and placed in a greenhouse at 20-24 °C for a further 10 days. Fungal infestation is evaluated 13 days after infection. Less than 1 % of the wheat plants show infestation.

Example A-15: Action against Rhizoctonia solani on rice

Protective local soil application

10-day-old rice plants are watered with a suspension (spray mixture) prepared from a formulation of the test compound, without contaminating the parts of the plants above the soil. Infection is carried out three days later by placing between the rice plants in each pot a blade of barley straw infected with Rhizoctonia solani. Fungal infestation is evaluated after 6 days' incubation in a controlled environment chamber at 29 °C day temperature and 26 °C night temperature and 95 % relative humidity. Less than 5 % of the rice plants show infestation. The plants have a healthy appearance.

Protective local foliar application

12-day-old rice plants are sprayed with a suspension prepared from a formulation of the test compounds. Infection is carried out one day later by placing between the rice plants in each pot a blade of barley straw infected with Rhizoctonia solani. Evaluation is carried out after 6 days' incubation in a controlled environment chamber at 29 °C day temperature and 26 °C night temperature and 95 % relative humidity. Fungal infestation on untreated and infected control plants is 100 %. Compounds of formula 1 cause in some cases complete inhibition of the disease infestation.

Example A-16: Action against Phytophthora on potato plants

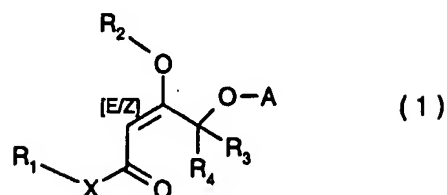
Residual-protective action: 2- to 3-week-old potato plants (Bintje variety) are sprayed with a spray mixture (0.02 % active ingredient) prepared from a wettable powder formulation of the test compound. 24 hours later, the treated plants are infected with a spore suspension of the fungus. The fungal infestation is evaluated after incubation of the infected plants for 5 days at 90-100 % relative humidity and 20 °C.

Compounds of formula 1 of Tables 1 to 5 and 8, e.g. *inter alia* 1.01, 1.03, 1.05, 1.30, 1.61, 1.73, 1.77, 1.114, 1.163, 1.170, 1.174, 1.183, 1.201, 1.208, 1.228, 1.235, 1.241, 2.01, 2.114, 2.148, 2.151, 3.01, 3.35, 3.73, 3.117, 4.04, 4.63, 4.70, 4.79, 5.01, 5.11, 5.61, 5.69, 8.75, 8.78, 8.81 and 8.98, exhibit a lasting action (less than 20 % fungal infestation).

Phytophthora infestation of untreated and infected control plants is 100 %.

What is claimed is:

## 1. A compound of formula 1



or a possible isomer thereof or a mixtures of isomers,

wherein:

R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>5</sub>haloalkoxy or by cyano;

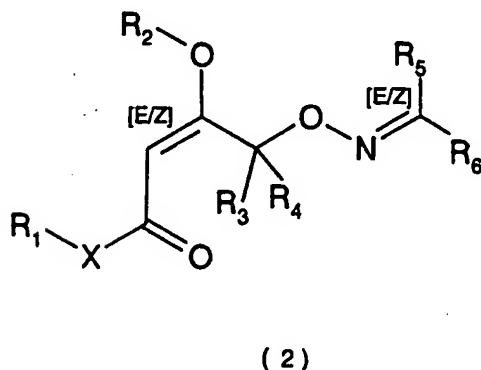
R<sub>2</sub> is C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl or by cyano;

R<sub>3</sub>/R<sub>4</sub> are each independently hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl or C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl;

A is a ketimino or aldimino group; and

X is oxygen, NH or NR<sub>9</sub> wherein R<sub>9</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl.

## 2. A compound of formula 2 according to claim 1



wherein

R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>5</sub>haloalkoxy or by cyano;

R<sub>2</sub> is C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, or Ar-C<sub>1</sub>-C<sub>5</sub>alkyl unsubstituted or substituted in the aryl moiety by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl or by cyano;

R<sub>3</sub>/R<sub>4</sub> are each independently hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl or C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl;

R<sub>5</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, cyano, or aryl unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio and/or C<sub>1</sub>-C<sub>5</sub>haloalkylthio;

R<sub>6</sub> is C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or by a 5- or 6-membered saturated or unsaturated heterocycle that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or

C<sub>3</sub>-C<sub>6</sub>alkenyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms



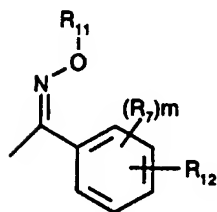
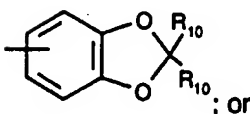
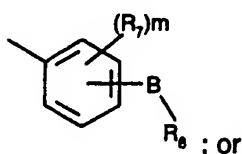
and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or by a 5- or 6-membered saturated or unsaturated heterocycle that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or

C<sub>3</sub>-C<sub>8</sub>alkynyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, halo-C<sub>1</sub>-C<sub>5</sub>alkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or by a 5- or 6-membered saturated or unsaturated heterocycle that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or

aryl unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, aryloxyalkyl, aralkyloxyalkyl, (C<sub>1</sub>-C<sub>5</sub>)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or

C<sub>3</sub>-C<sub>6</sub>cycloalkyl unsubstituted or substituted by C<sub>1</sub>-C<sub>5</sub>alkyl, alkoxy or by halogen; or a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio and/or aryl unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, cyano; and/or by a 5- or 6-membered heterocycle that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio,

C<sub>1</sub>-C<sub>5</sub>haloalkylthio, or by aryl unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio and/or C<sub>1</sub>-C<sub>5</sub>haloalkylthio; or a benzofused-5- or -6-membered heteroaromatic ring unsubstituted or substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, cyano, nitro, unsubstituted or substituted aryl, unsubstituted or substituted aryloxy or by an unsubstituted or substituted 5- or 6-membered heterocycle; or a radical:



wherein

R<sub>7</sub> is hydrogen, halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, haloalkoxy, haloalkylthio, cyano or nitro;

and

R<sub>8</sub> is hydrogen;

C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; oxo or a derivative thereof, such as a ketal; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl,

C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or by a 5- or 6-membered saturated or unsaturated heterocycle that may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or

C<sub>3</sub>-C<sub>8</sub>alkenyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; or by a 5- or 6-membered saturated or unsaturated heterocycle that may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or C<sub>3</sub>-C<sub>8</sub>alkynyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano and/or nitro; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano and/or nitro; or by a 5- or 6-membered saturated or unsaturated heterocycle that may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, cyano, nitro and/or by a 5- or 6-membered heterocycle that may be unsubstituted or substituted by halogen, alkyl, alkoxy, haloalkyl, haloalkoxy or by haloalkylthio; or

a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio and/or C<sub>1</sub>-C<sub>5</sub>haloalkylthio; or

a benzofused-5- or -6-membered heteroaromatic ring unsubstituted or substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, cyano, nitro, unsubstituted or substituted aryl, unsubstituted or substituted aryloxy or by an unsubstituted or substituted 5- or 6-membered heterocycle;

R<sub>10</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl, fluorine or chlorine;

R<sub>11</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>3</sub>-C<sub>8</sub>alkenyl or C<sub>3</sub>-C<sub>8</sub>alkynyl;

R<sub>12</sub> is R<sub>7</sub> or B-R<sub>13</sub>, and

R<sub>13</sub> is hydrogen;

C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; or by a 5- or 6-membered saturated or unsaturated heterocycle; or

C<sub>3</sub>-C<sub>8</sub>alkenyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; or by a 5- or 6-membered saturated or unsaturated heterocycle; or

C<sub>3</sub>-C<sub>8</sub>alkynyl unsubstituted or substituted by halogen; C<sub>1</sub>-C<sub>12</sub>alkoxy; C<sub>1</sub>-C<sub>5</sub>haloalkoxy; N(R<sub>2</sub>)<sub>m</sub>; aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl,

C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; aryloxy, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-O-, cyano, nitro and/or by a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms; or by a 5- or 6-membered saturated or unsaturated heterocycle; or aryl, unsubstituted or mono- or poly-substituted by halogen, C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>5</sub>haloalkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy-C<sub>1</sub>-C<sub>5</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy, C<sub>1</sub>-C<sub>3</sub>haloalkoxy, C<sub>1</sub>-C<sub>5</sub>alkylthio, C<sub>1</sub>-C<sub>5</sub>haloalkylthio, (C<sub>1</sub>-C<sub>5</sub>alkyl)<sub>3</sub>-Si-, cyano and/or nitro;

B is O, NR<sub>9</sub> or S(O)<sub>n</sub>;

X is O, NH or NR<sub>9</sub>;

R<sub>9</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl;

n is 0, 1 or 2, and

m is 1 or 2.

3. A compound according to claim 2 wherein

R<sub>1</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl;

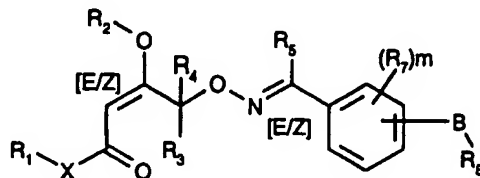
R<sub>2</sub> is C<sub>1</sub>-C<sub>5</sub>alkyl;

R<sub>3</sub>/R<sub>4</sub> are each independently hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl;

R<sub>5</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub>alkyl;

and the remaining radicals are as defined above.

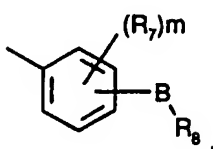
4. A compound of formula 3 according to claim 1



( 3 )

wherein

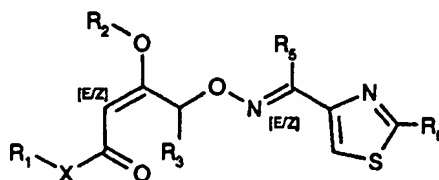
$R_8$  is a radical



and  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $B$ ,  $X$ ,  $m$  and  $n$  are as defined above.

5. A compound of formula 2 according to claim 2 wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $X$  are as defined above and  $R_8$  is especially a 5- or 6-membered heteroaromatic ring that contains one or more hetero atoms and that may be unsubstituted or mono- or poly-substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_3$ alkoxy,  $C_1$ - $C_3$ haloalkoxy,  $C_1$ - $C_3$ haloalkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ alkylthio,  $C_1$ - $C_5$ haloalkylthio and/or aryl unsubstituted or mono- or poly-substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_3$ alkoxy,  $C_1$ - $C_3$ haloalkoxy,  $C_1$ - $C_3$ haloalkoxy- $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ alkylthio,  $C_1$ - $C_5$ haloalkylthio,  $(C_1$ - $C_5$ alkyl) $_3$ -Si- and/or cyano; or by a benzofused-5- or -6-membered heteroaromatic ring that may be unsubstituted or substituted by halogen,  $C_1$ - $C_5$ alkyl,  $C_1$ - $C_5$ haloalkyl,  $C_1$ - $C_3$ alkoxy- $C_1$ - $C_5$ alkyl,  $(C_1$ - $C_5$ alkyl) $_3$ -Si-, cyano, nitro, unsubstituted or substituted aryl, unsubstituted or substituted aryloxy or by an unsubstituted or substituted 5- or 6-membered heterocycle.

6. A compound of formula (4) according to claim 2



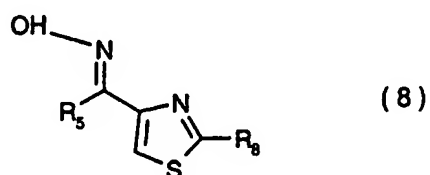
(4)

wherein

R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>5</sub>, R<sub>8</sub> and X are as defined above.

7. An intermediate of formula 5 selected from  
4-chloro-3-methoxypent-2-enecarboxylic acid ethyl ester,  
4-chloro-3-methoxypent-2-enecarboxylic acid methyl ester,  
4-chloro-3-methoxypent-2-enecarboxylic acid butyl ester, and  
4-chloro-3-methoxypent-2-enecarboxylic acid N,N-dimethylamide.

8. An intermediate of formula 8



wherein R<sub>5</sub> and R<sub>8</sub> are as defined above.

9. A composition for the control and prevention of pests, which comprises a compound according to claim 1 as active ingredient together with a suitable carrier.

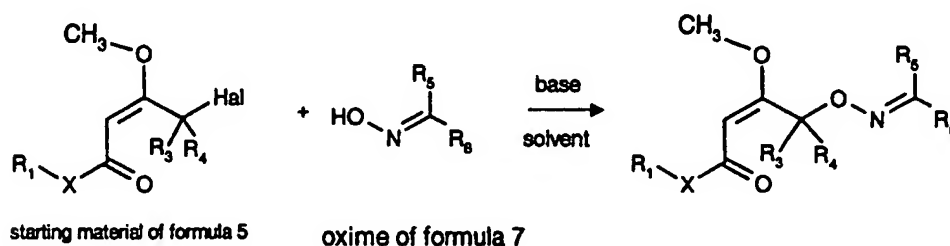
10. A composition according to claim 9, which comprises as active component a compound of formula 1 according to any one of claims 2 to 6.

11. The use of a compound of formula 1 according to claim 1 in the protection of plants against infestation by phytopathogenic microorganisms.

12. The use according to claim 11, which comprises employing as active ingredient a compound of formula 1 according to any one of claims 2 to 6.

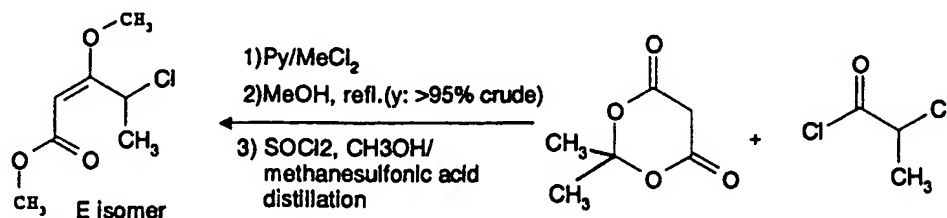
13. A method of controlling or preventing an infestation of crop plants by phytopathogenic microorganisms which comprises applying a compound of formula 1 according to claim 1 as active ingredient to the plant, to parts of the plant or to the locus thereof.

14. A method according to claim 13, which comprises applying as active ingredient a compound of formula 1 according to any one of claims 2 to 6.
15. A method according to claim 13, wherein the phytopathogenic microorganisms are fungal organisms.
16. A process for the preparation of a compound of formula 1 according to claim 1, which comprises reacting a compound of formula 5 with an oxime of formula 7



in a polar or non-polar solvent, preferably a polar solvent, such as dimethyl sulfoxide, dialkylformamide, N-alkylpyrrolidone, tetrahydrofuran, dioxane, ethyl acetate or an alcohol, in the presence of a base, such as an alkali metal carbonate, an alkali metal or alkaline earth metal hydride or a non-nucleophilic organic nitrogen base, at from -10 to 150 °C.

17. A process for the preparation of an intermediate of formula 5 according to claim 7 in which the desired E isomer is preferentially formed, which comprises reacting 2-chloropropionic acid chloride with Meldrum's acid in the presence of pyridine/methylene chloride and methanol at reflux temperature

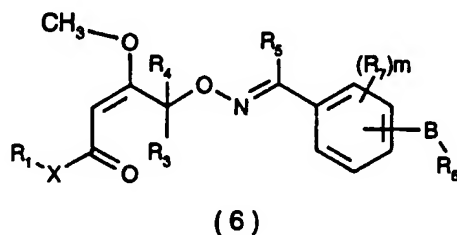


Scheme 3



and then distilling off the chloromethoxypent-2-enecarboxylic acid derivative by the addition of thionyl chloride in methanol and methanesulfonic acid.

18. A process for the preparation of a compound of the general formula 3 according to claim 4, which comprises converting a compound of formula 6



wherein B is oxygen and  $R_8$  is a protecting group, such as alkyl- or alkylaryl-silyl or alkoxyalkyl or aralkyloxyalkyl or benzyl and X,  $R_1$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_7$  and m are as defined above, by acid cleavage, cleavage with a fluoride or catalytic hydrogenation for the removal of the protecting groups, into a compound wherein  $R_8$  is hydrogen.